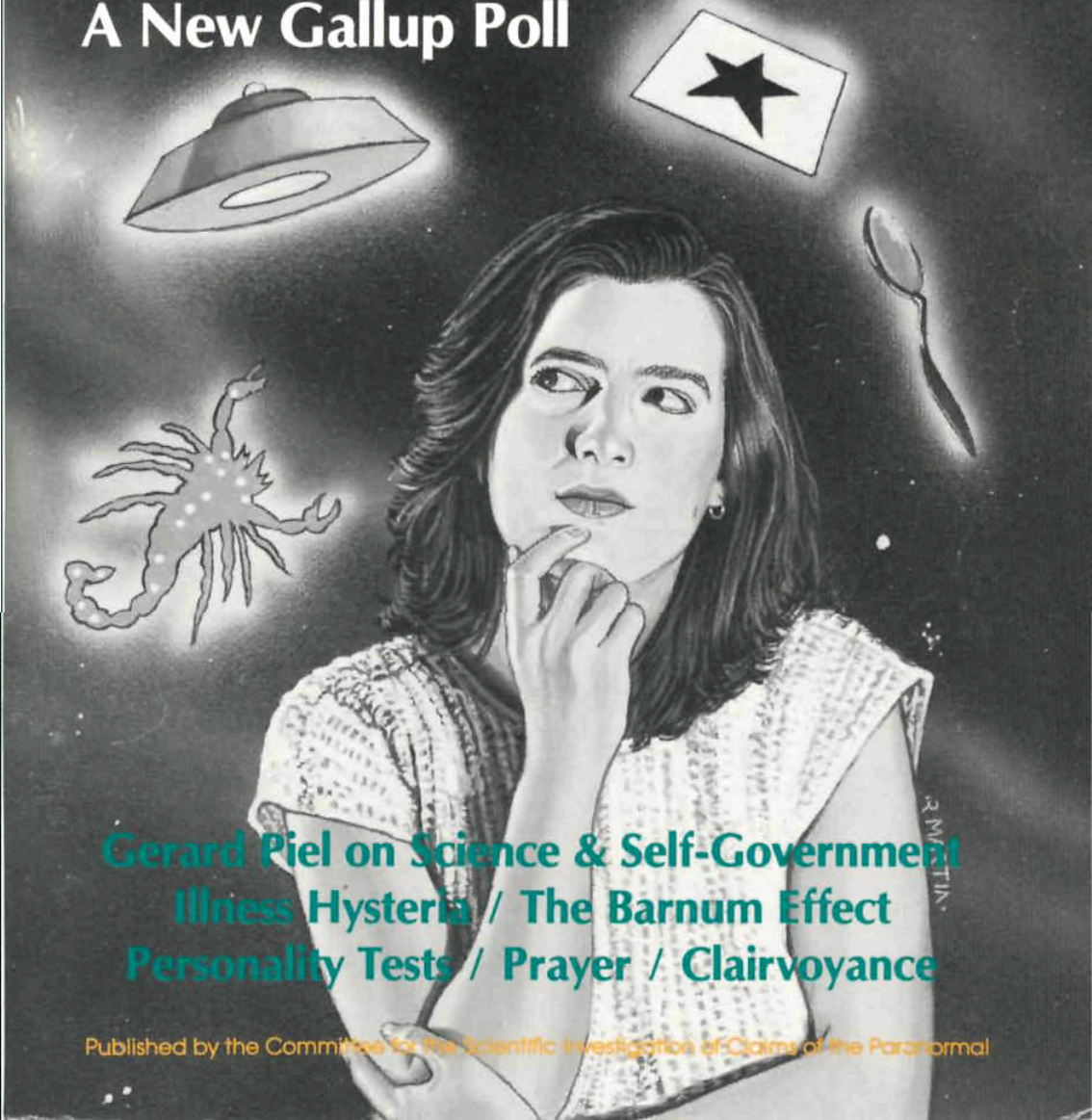
SKEPTICAL INQUIRER

Vol. 15, No. 2 / Winter 1991 $6.25

WHAT DO WE BELIEVE?
A New Gallup Poll



Gerard Piel on Science & Self-Government
Illness Hysteria / The Barnum Effect
Personality Tests / Prayer / Clairvoyance

Published by the Committee for the Scientific Investigation of Claims of the Paranormal

THE SKEPTICAL INQUIRER is the official journal of the Committee for the Scientific Investigation of Claims of the Paranormal.

Editor Kendrick Frazier.
Editorial Board James E. Alcock, Martin Gardner, Ray Hyman, Philip J. Klass, Paul Kurtz, James Randi.
Consulting Editors Isaac Asimov, William Sims Bainbridge, John R. Cole, Kenneth L. Feder, C. E. M. Hansel, E. C. Krupp, David F. Marks, Andrew Neher, James E. Oberg, Robert Sheaffer, Steven N. Shore.
Managing Editor Doris Hawley Doyle. **Contributing Editor** Lys Ann Shore.
Business Manager Mary Rose Hays.
Assistant Editor Andrea Szalanski. **Art** Valerie Ferenti-Cognetto.
Chief Data Officer Richard Seymour. **Computer Assistant** Michael Cione.
Typesetting Paul E. Loynes. **Audio Technician** Vance Vigrass. **Librarian,** Ranjit Sandhu.
Staff Lynda Harwood (Asst. Public Relations Director), Leland Harrington, Sandra Lesniak, Alfreda Pidgeon, Kathy Reeves. **Cartoonist** Rob Pudim.

The Committee for the Scientific Investigation of Claims of the Paranormal

Paul Kurtz, Chairman; philosopher, State University of New York at Buffalo.
Barry Karr, Executive Director and Public Relations Director.
Lee Nisbet, Special Projects Director.

Fellows of the Committee (partial list)

James E. Alcock, psychologist, York Univ., Toronto; **Isaac Asimov,** biochemist, author; **Irving Biederman,** psychologist, University of Minnesota; **Susan Blackmore,** psychologist, Brain Perception Laboratory, University of Bristol, England; **Henri Broch,** physicist, University of Nice, France; **Mario Bunge,** philosopher, McGill University; **John R. Cole,** anthropologist, Institute for the Study of Human Issues; **F. H. C. Crick,** biophysicist, Salk Institute for Biological Studies, La Jolla, Calif.; **L. Sprague de Camp,** author, engineer; **Bernard Dixon,** science writer, London, U.K.: **Paul Edwards,** philosopher, Editor, *Encyclopedia of Philosophy;* **Antony Flew,** philosopher, Reading Univ., U.K.; **Andrew Fraknoi,** astronomer, executive officer, Astronomical Society of the Pacific; editor of *Mercury;* **Kendrick Frazier,** science writer, Editor, THE SKEPTICAL INQUIRER; **Yves Galifret,** Exec. Secretary, l'Union Rationaliste; **Martin Gardner,** author, critic; **Murray Gell-Mann,** professor of physics, California Institute of Technology; **Henry Gordon,** magician, columnist, broadcaster, Toronto; **Stephen Jay Gould,** Museum of Comparative Zoology, Harvard Univ.; **C. E. M. Hansel,** psychologist, Univ. of Wales; **Al Hibbs,** scientist, Jet Propulsion Laboratory; **Douglas Hofstadter,** professor of human understanding and cognitive science, Indiana University; **Ray Hyman,** psychologist, Univ. of Oregon; **Leon Jaroff,** sciences editor, *Time;* **Lawrence Jerome,** science writer, engineer; **Philip J. Klass,** science writer, engineer; **Edwin C. Krupp,** astronomer, director, Griffith Observatory; **Paul Kurtz,** chairman, CSICOP, Buffalo, N.Y.; **Lawrence Kusche,** science writer; **Paul MacCready,** scientist/engineer, AeroVironment, Inc., Monrovia, Calif.; **David Marks,** psychologist, Middlesex Polytech, England; **David Morrison,** space scientist, NASA Ames Research Center; **Richard A. Muller,** professor of physics, Univ. of Calif., Berkeley; **H. Narasimhaiah,** physicist, president, Bangalore Science Forum, India; **Dorothy Nelkin,** sociologist, Cornell University. **Joe Nickell,** author, technical writing instructor, University of Kentucky; **Lee Nisbet,** philosopher, Medaille College; **James E. Oberg,** science writer; **John Paulos,** mathematician, Temple University; **Mark Plummer,** lawyer, Australia; **W. V. Quine,** philosopher, Harvard Univ.; **James Randi,** magician, author; **Milton Rosenberg,** psychologist, University of Chicago; **Carl Sagan,** astronomer, Cornell Univ.; **Evry Schatzman,** President, French Physics Association; **Eugenie Scott,** physical anthropologist, executive director, National Center for Science Education, Inc.; **Thomas A. Sebeok,** anthropologist, linguist, Indiana University; **Robert Sheaffer,** science writer; **B. F. Skinner,** psychologist, Harvard Univ.; **Dick Smith,** film producer, publisher, Terrey Hills, N.S.W., Australia; **Robert Steiner,** magician, author, El Cerrito, California; **Carol Tavris,** psychologist, UCLA; **Stephen Toulmin,** professor of philosophy, Northwestern Univ.; **Marvin Zelen,** statistician, Harvard Univ. (Affiliations given for identification only.)

Manuscripts, letters, books for review, and editorial inquiries should be addressed to Kendrick Frazier, Editor, THE SKEPTICAL INQUIRER, 3025 Palo Alto Dr., N.E., Albuquerque, NM 87111.

Subscriptions, change of address, and advertising should be addressed to: THE SKEPTICAL INQUIRER, Box 229, Buffalo, NY 14215-0229. Old address as well as new are necessary for change of subscriber's address, with six weeks advance notice. Subscribers to THE SKEPTICAL INQUIRER may not speak on behalf of CSICOP or THE SKEPTICAL INQUIRER.

Inquiries from the media and the public about the work of the Committee should be made to Paul Kurtz, Chairman, CSICOP, Box 229, Buffalo, NY 14215-0229. Tel.: (716) 834-3222. FAX: (716)-834-0841.

Articles, reports, reviews, and letters published in THE SKEPTICAL INQUIRER represent the views and work of individual authors. Their publication does not necessarily constitute an endorsement by CSICOP or its members unless so stated.

Copyright ©1990 by the Committee for the Scientific Investigation of Claims of the Paranormal, 3159 Bailey Ave., Buffalo, NY 14215-0229. All rights reserved.

Subscription Rates: Individuals, libraries, and institutions, $25.00 a year; back issues, $6.25 each.

Postmaster: THE SKEPTICAL INQUIRER is published quarterly. Winter, Spring, Summer, and Fall, by CSICOP, Inc. Printed in the U.S.A. Second-class postage paid at Buffalo, New York, and additional mailing offices. Send changes of address to THE SKEPTICAL INQUIRER, Box 229, Buffalo, NY 14215-0229.

SKEPTICAL INQUIRER

Vol. 15, No. 2, Winter 1991

ISSN 0194-6730

Journal of the Committee for the Scientific Investigation of Claims of the Paranormal

SPECIAL REPORT/GALLUP POLL 137
Belief in Paranormal Phenomena Among Adult Americans
George H. Gallup, Jr., and Frank Newport

ARTICLES

Science and Self-Government
Gerard Piel **147**

The West Bank Collective Hysteria Episode: The Politics of Illness
James R. Stewart **153**

Acceptance of Personality Test Results
Philippe Thiriart **161**

Belief in Astrology: A Test of the Barnum Effect
Christopher French, Mandy Fowler, Katy McCarthy, and Debbie Peers **166**

A Test of Clairvoyance Using the Method of Signal Detection
Stuart J. McKelvie and Hélène Gagné **173**

Intercessory Prayer As Medical Treatment? An Inquiry
Jeff Witmer and Michael Zimmerman **177**

NEWS AND COMMENT 115
Government Supports Homeopathy Experiment / "Holy Stones" / Fake Levitation Photo / APA Hoax / Psychic Investment Counseling / Advice for Grandchildren / Soccer Predictions a Bust

NOTES OF A FRINGE-WATCHER 128
Tipler's Omega Point Theory
Martin Gardner

PSYCHIC VIBRATIONS 135

BOOK REVIEWS

Howard Blum, *Out There* (Philip J. Klass) **181**

Victor J. Stenger, *Physics and Psychics* (Steven Hoffmaster) **184**

Joe Nickell and John F. Fischer, *Secrets of the Supernatural* (Robert A. Baker) **186**

Edith Fiore, *Encounters* (J. R. Corey) **188**

Joe Nickell, *The Magic Detectives;* James ("The Amazing") Randi, *The Magic World of The Amazing Randi* (Robert A. Baker) **190**

SOME RECENT BOOKS 192

ARTICLES OF NOTE 194

FORUM 200
Bad Teaching / Wild Animals / Human Needs

LETTERS TO THE EDITOR 209

CSICOP NEWS

Skepticism in Europe, *Paul Kurtz* **218**

ON THE COVER: Illustration by R. Martin. Cover design by Valerie Ferenti-Cognetto.

The Skeptical Inquirer . . .

SAVE UP TO 30%

The perfect gift for relatives and friends.

$25.00 for first one-year gift subscription

1. _____
NAME (please print)

_____
ADDRESS

_____
CITY STATE ZIP

only $18.75 for second one-year gift subscription (25% savings)

2. _____
NAME (please print)

_____
ADDRESS

_____
CITY STATE ZIP

only $17.50 for each additional gift hereafter (30% savings)

3. _____
NAME (please print)

_____
ADDRESS

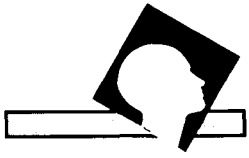
_____
CITY STATE ZIP

A gift card will be sent in your name.

_____
YOUR NAME (please print)

_____
ADDRESS

_____
CITY STATE ZIP



Order toll-free 800-634-1610

In N.Y. State call 716-834-3222

SKEPTICAL INQUIRER
Box 229
Buffalo, N.Y. 14215-0229

Include my own subscription for:
1 year ($25.00) ☐ 2 years ($43.00) ☐ 3 years ($59.00) ☐

Charge my ☐ Visa ☐ MasterCard

#_____ Exp. _____

Signature_____

☐ Check enclosed ☐ Bill me Total $ _____

(Outside the U.S., please pay in U.S. funds drawn on a U.S. bank. If you live outside North America and would like airmail, add $16.00 a year.

Mail to: **Skeptical Inquirer • Box 229**
Buffalo, New York 14215-0229

News and Comment

The Para-Plus Predicament: Homeopathy in Canada

Canadian veterinarian Peter Langer has sold more than $200,000 worth of water to farmers as an experimental medicine that he claims cures a common udder disease in dairy cows.

"But it's very special water," says the 68-year-old owner of Dorchester Laboratories, in a small town 15 kilometers east of London, Ontario.

Langer has been selling the controversial "processed" water remedy for the past three and a half years under the auspices of an experimental license from the Canadian federal government's agriculture section, known as Agriculture Canada.

He says Para-Plus, the remedy's trade name, has already cured mastitis, a common dairy cattle infection, in hundreds of cows. Many farmers are using Langer's product—which costs $45 for four 25-cc injections—and say they are getting excellent results. One farmer called it a "flipping miracle."

If Langer is right it would have to be a miracle. And it would turn the world's scientific community on its ear.

That's because Langer's product is based on homeopathy, a theory of medicine devised by Samuel Hahnemann (1755-1843), a German physician, and refuted by scientists for more than a century. (See "'Homeopathy," by Stephen Barrett, *SI*, Fall 1987.) Hahnemann's prescientific theories have never been proved and defy the basic laws of physics, chemistry, and biology.

Langer's treatment, which he calls a "parabiologic," has been almost universally rejected by the agricultural scientific community. They say his theory is antiquated, his studies poorly designed, and his reported successes

based on anecdotal evidence, which is not considered scientifically valid.

The parabiologic controversy raises some vital questions. How did Langer get an experimental license for a product that has no basis in modern science? And will the Canadian government license him to sell something the scientific community calls bunk?

Officials at Agriculture Canada say they granted the experimental license to Langer because mastitis is a serious, widespread problem for dairy farmers.

Mastitis is an infection of a cow's mammary gland, caused by microorganisms, that results in swelling and redness. Clinical mastitis affects the milk, making it unusable, and if the disease is left untreated it can cause permanent scarring of the cow's udder. The usual treatment—antibiotics—isn't always effective and leaves residues in the milk, rendering it unsuitable for sale. Either way, the loss of milk is tough on farmers and expensive for consumers.

Because the disease is so common, officials wanted to give Langer's product a chance to prove itself. He also had done preliminary work with indications that parabiologics might be effective, said Doug Alexander, chief of the Veterinary Biologics and Biotechnology Section of the Animal Health Division of Agriculture Canada. It's important to note that Langer is the former chief of the department that granted him the license. He held the position of chief of veterinary biologics from 1973 to 1979, and was senior staff veterinarian in the food production branch until his retirement in 1987.

Langer admits his association with the department may have helped him at first, but not anymore. "There's no favoritism being shown whatever," he said. "They've licensed products in the past that haven't had a fraction of the backing or the supportive data that I have already provided for this one."

For their part, the biologics department is looking for scientific evidence that Para-Plus works, and time is running out for Langer. Langer, who holds a doctor of veterinary medicine degree (D.V.M.) from the University of Pennsylvania and a Ph.D. in virology from Cornell, will not reveal the exact process he uses to make the parabiologic, but says it is "prepared from the bacteria most commonly associated with bovine mastitis." He thinks the remedy stimulates an immunological response in the cow through the transfer of energy.

Langer admits "the mechanisms by which parabiologics work are not yet fully understood," but he insists they do work. Essentially, Langer is following homeopathic principles, which state that the smaller the dose of a substance, the more powerful its effect. And Langer admits that, like most homeopathic remedies, his parabiologic uses dilutions that reduce the original active ingredient past the point where any of the substance remains. He suggests that an "energy imprint" is left in the water that activates the "bioenergy" and "electromagnetic forces" in the cow, bolstering its ability to fight disease. (See "The Remembering Water Controversy," *SI*, Winter 1989). Langer even warns users to store the product away from magnets, microwaves, and X-rays, because magnetic radiation will destroy its potency. Scientists call all that nonsense.

But Langer points to three years' worth of studies in which several forms of the parabiologic were field-tested on more than 200 cows. He said Para-Plus has, not surprisingly, been shown to be perfectly safe with no side effects. He said he has achieved cure rates as high as 80 percent in clinical trials and 70 percent in cows induced

with mastitis in controlled trials.

But critics point out that Langer's double-blind, placebo-controlled trials involved small numbers of cows (30), and that parabiologics have not been tested on a range of pathogens that cause mastitis. Critics also point out that mastitis is highly variable and has a spontaneous cure rate that can be as high as 50 percent.

Langer has submitted his data and is awaiting a decision. Also, at the Nova Scotia Agricultural College in Truno, N.S., professor Alan Fredeen is conducting a small study using Langer's Para-Plus. Fredeen says it is not a placebo-controlled trial and the study is not complete.

In the meantime, scientists have questioned the validity of Langer's entire trial, particularly one lasting more than three years. "Someone somehow should really be questioning how much water you can sell under an experimental license," said one dairy cattle specialist.

The government said it needs more data from Langer and more time to evaluate the results. Wallace Sampson, a professor of medicine at Stanford University School of Medicine (see his "When Not to Believe the Unbelievable," *SI*, Fall 1989), says the government is on the scientific hot seat: If it agrees that Langer's product actually works the way he says it works, the repercussions would be enormous.

"Not only medicine, but chemistry, physics, astronomy, geology, ecology, every scientific discipline, would have to rewrite all the books," Sampson said.

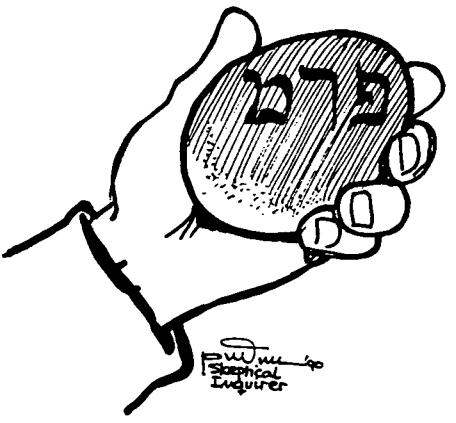
—Paul Benedetti

Paul Benedetti is a reporter with the Hamilton Spectator, *Hamilton, Ontario. He has written numerous articles on alternative health and "holistic" medicine.*

'Holy Stones' of Newark, Ohio, Not So Holy After All

The spectacular mound and earthwork sites of eastern North America once were assumed to be the work of a lost white race of "mound-builders." The Native Americans, it was claimed, were too savage, stupid, and unambitious to have accomplished such astonishing engineering feats. This racist theme is echoed in the perennial chorus of claims purporting to "prove" that one or another Old World civilization discovered and colonized the Americas long before Leif Ericson and Christopher Columbus ("Anthropology Beyond the Fringe," by John R. Cole, *SI*, Spring/Summer 1978:62-71; "Deciphering Ancient America," by Marshall McKusick, *SI*, Spring 1981:44-50). One of the more popular contenders in this debate has been the so-called Lost Tribes of Israel, and a handful of graven images from Licking County, Ohio, has been offered as evidence for a prehistoric Hebrew presence in America.

The Newark "Holy Stones" are five small stone carvings bearing Hebrew inscriptions that reportedly came from



within mounds and earthen enclosures in and around Newark, Ohio. The initial discoveries were made in 1860 by David Wyrick, an avid proponent of the theory that the Lost Tribes of Israel had constructed the great mounds and earthworks of the Ohio Valley. Wyrick's "discoveries" were dismissed as frauds by archaeologists, but in subsequent years a few additional "Hebrew Stones" were uncovered by seemingly independent investigators. These corroborative finds have been used by Robert Alrutz, retired professor of biology at Denison University, to support his opinion that the Holy Stones are genuine relics of antiquity left by pre-Columbian Hebrew "discoverers" of America.

Contemporary reports suggested that at least two of the subsequent finds were the work of a local practical joker named John H. Nicol. Nicol believed that Wyrick had faked the original Holy Stones and decided to fabricate his own and plant them in mounds in order to prove just how gullible people could be. Alrutz dismissed these reports as apocryphal and concluded that the artifacts were too sophisticated for Nicol to have faked.

Recent epigraphic research, announced in the *Newark Advocate* of June 6, 1990, has now established beyond a reasonable doubt that two of the Holy Stones are clever hoaxes perpetrated by John Nicol. J. Huston McCulloch, professor of economics at Ohio State University, has transliterated the Hebrew inscriptions that appear on two of the artifacts. The English equivalents of the Hebrew letters, when read in proper sequence, spell out the following: J - H - NCL. By adding the vowels, which Hebrew does not apply, McCulloch derived the name J[ohn] - H - NiCoL. It seems, therefore, that the waggish Nicol carved his name across two of the Holy Stones. Unfortunately, gullible scholars, grasping at straws to prove a treasured theory, have failed for more than a century to get the joke.

Alrutz insists that McCulloch's demonstration that two of the Holy Stones are fakes has no implications for the authenticity of Wyrick's original discoveries. McCulloch, himself an advocate of Barry Fell's claims of pre-Columbian Old World contacts with America, agrees. However, the only possible substantive test of the authenticity of the Holy Stones is the recovery of corroborating artifacts by independent investigators. If the only corroborative discoveries are demonstrated to be frauds, it becomes reasonable to assume that the original finds are themselves fraudulent.

The Newark Holy Stones were "discovered" during a period when the science of archaeology was in its infancy. There were no established field techniques, and methods of recording and analyzing data generally were not sophisticated. During this period, serious consideration was being given to the notion that Native American cultures had been influenced by various Old World civilizations, and there was, according to one author in an 1892 issue of *Science*, virtually a "constant recurrence of frauds" in support of one or another of these competing theories.

Given such a lively historical context it is necessary to view any extraordinary discovery from this period with a skeptical eye. It is important to keep an open mind, but it is useful and legitimate to evaluate nineteenth-century claims on the basis of twentieth-century knowledge. In the case of the Newark Holy Stones, this means that Wyrick's claim that ancient Hebrews lived in Licking County must be balanced by the utter lack of corroborating evidence

obtained by modern investigators using improved methods of survey and excavation. If ancient Hebrews were present in the Americas, then we should find evidence of their settlements: towns, villages, trading camps, and so on. For example, it has been demonstrated that Vikings were present in North America before Columbus by the discovery and excavation of the site of L'Anse aux Meadows in Newfoundland.

Unfortunately for advocates of the Holy Stones, no modern archaeological research project in the Americas has yet located an ancient Hebrew settlement. Moreover, scores of twentieth-century scientific excavations of Woodland Period sites in eastern North America have not produced a single artifact derived from any Old World civilization.

It also must be pointed out that the Old World colonists would have carried with them much more than a few enigmatic stone carvings. After 1492, and especially after the De Soto and Coronado expeditions in 1539 and 1540, North American Indian populations were decimated by European diseases against which they had no immunity. In other words, they had never been exposed to these diseases before. If they had at some time in the past been exposed to Europeans (or Africans, or Asians), then the catastrophic population declines of the sixteenth century would have occurred sooner, at the time of initial contact. Moreover, such a catastrophe would not be repeated in the sixteenth century because the surviving Indians would have built up immunities to the foreign diseases. A biologist like Alrutz should understand this.

> The truth of the matter probably is, that all this misconception is due to the readiness of people to accept notoriety and bombast for authority and learning; to believe the false, rather than the true, so long as it strongly appeals to their love of the marvelous.
>
> And this credulity is, in turn, fostered and encouraged by shrewd empirics who see in it something that may be worked to their own advantage; or stimulated by the honest but mistaken enthusiast who wishes to believe, and to have others believe, that these mounds of earth indicate for ancient America a dominion of half-forgotten empires of the East. (Gerard Fowke, 1889)

—*Bradley T. Lepper*

Bradley Lepper is the curator of the Newark Earthworks State Memorials for the Ohio Historical Society and has been a visiting lecturer in anthropology at Denison University.

Famous Levitation Photo Is a Fake

Perhaps the most famous photograph of a person supposedly levitating has been shown to be a fake. The photograph, of the Brazilian medium Carlos Mirabelli, was taken in 1934. It shows Mirabelli, clad in a white lab coat, apparently floating in the air several feet off the ground. In the past, all copies of the photograph have been reproduced from poor-quality copies.

I recently discovered the original print in the Manuscript Room of the Cambridge University Library in England. This print, inscribed by Mirabelli to the British researcher Theodore Besterman, who was sent to Brazil by the Society for Psychical Research in 1934 to investigate Mira-

The APA first became aware of the hoax in early August, when someone who had received a copy handed it to association officials at an APA conference. By the end of the month, APA's Media Relations Department had fielded about half a dozen calls concerning the release.

According to Lisa Wyatt, APA's director of public affairs, the hoax letter seems to have been sent to "organizations, including publications and individuals that have a special interest in parapsychology." Both the stationery and envelopes used were genuine, indicating that the perpetrator must somehow have gained access to them. The fact that CSICOP received an "original" of the release, and not a photocopy, indicated to Executive Director Barry Karr that "someone wanted us to have it."

Much of the release consisted of lengthy comments attributed to "Dr. Gary Vandenbos, a longtime APA executive." In fact, Dr. Vandenbos does exist: he's the director of publications and communications at APA. "But that is the *only* genuine fact in the entire release," says Lisa Wyatt emphatically. Other claims made in the release have no foundation in truth. These false claims are:

- that APA has created a "special committee to research, document and investigate all parapsychological claims that it can uncover."
- that Dr. Vandenbos was "named to head this committee."
- that the committee "would be investigating all forms of paranormal phenomena."
- that the committee "will be getting a 1-800 number so that people from across the United States can call in their reports."
- that APA will establish "a new APA journal called 'The Journal of American Parapsychology.' "

Lisa Wyatt says that to her knowledge this is the first time anyone has sought to victimize the American Psychological Association in this way. Barry Karr comments: "This sort of thing isn't unknown. It does happen with organizations from time to time."

—Lys Ann Shore

Lys Ann Shore is a Washingon, D.C., writer and editor and a SKEPTICAL INQUIRER contributing editor.

Psychic Forecasting For Investors

Psychics, astrologers, and others who claim to foresee the future take umbrage when asked, "How come, if you can predict the future,

Advice to a Grandchild

There is something about becoming a parent or grandparent that focuses the mind. Barry Williams, president of the Australian Skeptics, wrote the following for his newborn grandson. It has already been picked up from the Skeptics' newsletter and published in an Australian newspaper, and we and many others think it deserves a still wider audience. You might consider giving it to your own children or grandchildren:

At the moment you were born the solar system had a unique configuration. This fact is unlikely to have any effect on your future life. Your name contains a certain selection of letters. Apart from being a label you will wear for life, there is no hidden, esoteric significance to the letters that make up your name.

You will live on a planet that is several billion years old and in a universe that is somewhat older. You are a member of the species *Homo sapiens* and your distant ancestors were of different species. You are not the descendant of purpose-built humans who were designed to dominate our planet, nor are you the result of experiments by space faring aliens. Your childhood ills will not be cured by quartz crystals, vibrations given off by colored threads, or appeals to supernatural entities.

The world you will live in is a strange, complex place, full of contradictions. You will encounter superstition, fear, ideologies, hatred, dogmas, and many other unpleasant things. You will also encounter knowledge, love, joy, beauty, and lots and lots of people. I hope that you will be skeptical, because skepticism insulates you from all those things that are the fruits of unreason.

I will do everything I can to make it that way for you, and why not? That's what grandfathers are for. ■

you aren't tooling down Wall Street in your Rolls Royce instead of nickel-and-diming it in scruffy carnivals and night clubs?"

Their usual answer is "We don't use our gifts for personal enrichment." (Joan Quigley's $3,000-a-month retainer from the Reagan White House for astrological services may not qualify as "personal enrichment" but it surely buys a lot of beans.)

This denial of avarice among prognosticators may be wearing a little thin. A recent day's mail brought a pitch for a new investment service, "The Psychic Forecaster." This brings you the financial wisdom of psychics and astrologers; two full years for only $58, including your *Personal Financial Bio-Rhythm Chart*, so that "for each month of the year, you'll have charted three distinct recurring cycles: your *physical, emotional, and intellectual* cycles."

The sales pitch includes a sample of psychic forecasting, predicting that: (1) President Gorbachev will be ousted from power . . . ; (2) the S&L crisis will intensify . . . ; (3) another major air disaster is looming . . . ; (4) a well-

known personality in Washington, D.C., is dying of AIDS . . . ; (5) political revolution—possible war—will come to a southern African country; and several more predictions that sound very much as though their writer has been reading the daily newspapers.

This monthly revelation is published by Strategic Communications, Ltd., of Orlando, Florida, which modestly describes itself as "one of the nation's largest investment publishing companies." Somehow this major publisher has escaped the notice of the editors of the 1990 *Gale's Directory of Publishers* (formerly *Ayer's Directory*), which lists even the tiniest publisher who seeks mailing privileges.

Without the aid of psychic powers or astrological charts, one can venture a prediction: This new publication will be successful. It will provide the information and assurance for which a certain fraction of the American people has been waiting. Its record may even be no worse than that of some current market newsletters that lack the benefit of occult insights.

—*Paul B. Horton*

Paul Horton lives in Sun City, Arizona.

Wizards, Clairvoyants See Unclearly, Boot Soccer Predictions

Three months before the Soccer World Cup, wizards, astrologers, and clairvoyants from the Italian Wizards Association gathering in Milan, Italy, predicted some of the results. Their predictions were reported by the Associated Press and published in the April 11, 1990, *International Herald Tribune*. How did they fare?

- Prediction: The final match will be between Italy and Argentina. Some seers saw Italy winning. *Wrong* on both predictions. When Argentina met Italy in the *semi-finals*, Argentina won. And Italy never made it to the final. Notice that this was considered the most probable situation by soccer analysts; the host country against the previous World Cup winner is a likely final according to the bookmakers.
- Prediction: Cameroon and the United Arab Emirates will do unexpectedly well. Cameroon did in fact win against Argentina in their first match. This was unexpected. However, both Cameroon and the UAE were eliminated early in the contest,

Copies of the Mirabelli photograph, such as this one, make it seem he is levitating, but an examination of an original print shows that he is standing on a ladder that was removed from the photo by chemical retouching.

belli, is far clearer than any previously seen.

Mirabelli is, in fact, standing upon a stepladder. The print clearly shows that a stepladder of some sort has been removed from the photograph by chemical retouching to give the illusion that Mirabelli is floating in the air. The former presence of the ladder can be seen in the wavy pattern present between Mirabelli's shoes in the photograph. The pattern of the flowered wallpaper hides the alteration in reprints of the original. The fact that the fake photo is inscribed by Mirabelli to Besterman also shows that Mirabelli was himself aware of the alteration.

This deception means that many of the phenomena of Mirabelli, a medium who was known as perhaps the one who claimed more amazing paranormal feats than any other medium in history, and whose claims often rest upon photographic evidence, must be seriously re-evaluated. None of the more startling phenomena ever occurred in the presence of any of the non-Brazilians who attended a Mirabelli séance. Evidence for the materialization of dead bodies seems to rest largely upon photographs and the claims of Mirabelli's closest associates.

—*Gordon Stein*

Hoaxer Claims APA Intends to 'Explain The Unexplainable'

At first glance, it seemed a bombshell: news that the American Psychological Association had founded a new committee for parapsychology whose mission would be to "explain the unexplainable." There was the press release, printed on APA stationery, dated July 20, 1990, and marked "For Immediate Dissemination." (CSICOP headquarters received its copy in the mail on August 8.) But almost immediately it became clear that this so-called press release was simply a rather unsophisticated hoax. So much was apparent from the naive writing style and the lack of a name and telephone number of a "contact person" at the APA. (Genuine press releases always carry the name and telephone number of the organization's spokesperson assigned to answer reporters' questions about the subject matter.)

A telephone call to the Media Relations Department at the American Psychological Association offices in Washington, D.C., confirmed that the "press release" was indeed a fake.

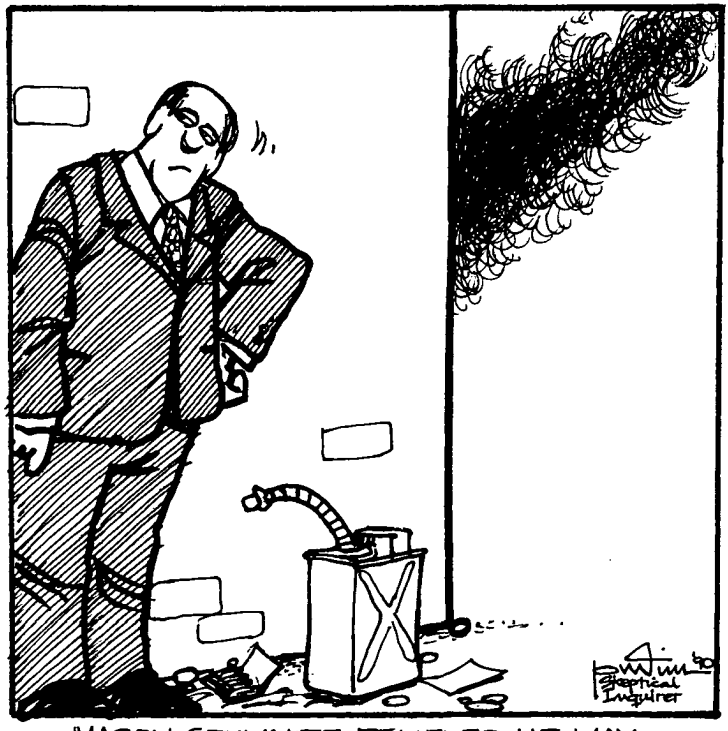
and the UAE did extremely poorly according to all accounts. In fact, the fastest goal of the whole World Cup was scored precisely against the UAE (by Yugoslavia). The Federal Republic of Germany, the winner, was not even mentioned as "doing well."

• Prediction: Diego Maradona of Argentina and Marco Van Basten of the Netherlands will be the big stars. This also was very likely, since Diego Maradona was considered by most observers to be the best soccer player in the world. In any event, he is apparently the most highly paid (not in his country, but in Naples, where he is a member of the local soccer team). Well, neither of these players did very well according to most commentators. In particular, Maradona was not even close to matching some of the best international players; and neither was among the first six leading scorers. In fact, among the first six, none were from Argentina or the Netherlands. Since the Netherlands never made it very far in the competition, it is hard to judge how Van Basten would have scored had his team lasted longer.

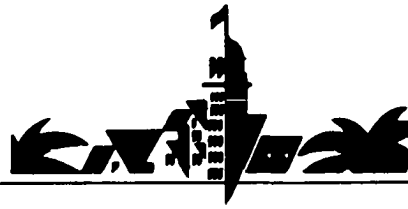
These were not the predictions of an isolated fortune-teller: they were the result of a consensus among prominent members of the Italian Wizards Association. This time their luck was well below average.

—*Claude Benski*

Claude Benski is secretary general of France's Committee for the Investigation of Paranormal Phenomena.



MASON GRUMNITZ BELIEVES HE MAY HAVE STUMBLED ON A CLUE TO THE CAUSE OF SPONTANEOUS COMBUSTION.



Make plans now to join us at the

1991 CSICOP Conference

Co-sponsored by the University of California at Berkeley Physics Department and hosted by the Bay Area Skeptics

at the spectacular

Claremont Resort Hotel
Berkeley / Oakland Hills, California

Friday, Saturday, and Sunday
May 3, 4, 5, 1991

Keynote Address

"In Search of Our Origins"

Donald C. Johanson
President, Institute of Human Origins, Berkeley

Friday, May 3

7:30 - 9:00 A.M.: Registration

9:00 - 9:15 A.M.: Opening Remarks — **Paul Kurtz,** CSICOP Chairman

9:15 A.M. - 12 NOON: CONTROVERSIES IN HYPNOSIS

Moderator: **Robert A. Baker,** professor emeritus of psychology, University of Kentucky, Lexington
Nicholas Spanos, professor of psychology, Carleton University, Ottawa
Ernest Hilgard, professor of psychology, University of California, Berkeley
James Kreskin ("The Amazing Kreskin")

12 NOON - 2:00 P.M.: Lunch Break

2:00 - 5:00 P.M.: Two Concurrent Sessions

(1) SUBLIMINAL PSEUDOSCIENCE

Moderator: **Ray Hyman,** professor of psychology, University of Oregon, Eugene
Eric Eich, associate professor of psychology, University of British Columbia, Vancouver
Anthony Pratkanis, assistant professor of psychology, University of California, Santa Cruz
Timothy Moore, professor of psychology, Glendon College, York University, Toronto

(Continued on next page.)

Friday (continued)

(2) PSYCHOLOGY QUACKERY

Moderator: **Barry Beyerstein,** professor of psychology, Simon Fraser University, Vancouver, B.C.
Loren Pankratz, professor of psychology, Oregon Health Sciences University, Portland
Gerald Rosen, professor of psychology and psychiatry, University of Washington, Seattle
Carol Tavris, author, lecturer, Department of Psychology, UCLA

5:00 - 8:00 P.M.: Dinner Break

8:00 P.M.: KEYNOTE ADDRESS

(Wheeler, Auditorium, University of California, Berkeley)

"In Search of Our Origins"

Donald C. Johnson, President, Institute of Human Origins and professor of anthropology, Stanford University

To be followed by optional trip to Chabot Observatory (reservations limited)

Saturday, May 4

9:00 A.M. - 12 NOON: CATASTROPHISM AND EVOLUTION

Moderator: **Eugenie Scott,** physical anthropologist, executive director, National Center for Science Education
Walter Alvarez, professor of geology, University of California, Berkeley
Richard Muller, professor of physics, University of California, Berkeley
Jere Lipps, professor of integrated biology, University of California at Berkeley

12 NOON - 2:00 P.M.: CSICOP Luncheon (optional)

"It Must Be Psychic: The Psychology of the Paranormal"

Susan Blackmore, psychologist, University of Bristol, U.K.

2:00 - 5:00 P.M.: Two Concurrent Sessions

(1) URBAN LEGENDS

Moderator: **Robert Hicks,** analyst, Department of Clinical Justice Services, Commonwealth of Virginia
Jan Brunvand, professor of English, University of Utah
Alan Dundes, professor of anthropology, University of California, Berkeley
William Ellis, associate professor of English and American Studies, Pennsylvania State University, Hazleton

(2) TEACHING CRITICAL THINKING WITH THE SKEPTICAL INQUIRER

Moderator: **Lee Nisbet,** professor of philosophy, Medaille College
Steven Hoffmaster, professor of physics, Gonzaga University
Richard Malvin, professor of physiology, University of Michigan School of Medicine
Brant Abrahamson, social studies educator, Riverside Brookfield High School, Brookfield, Ill.

(Continued on next page.)

Saturday (continued)

6:00 - 7:00 P.M.: Pre-Banquet Social Hour (cash bar)

7:00 - 10:00 P.M.: AWARDS BANQUET (optional)

Awards Presentation: **Paul Kurtz,** CSICOP Chairman

Donald C. Johanson, Eugenie Scott, and Susan Blackmore

Sunday, May 5

9:00 A.M. - 12 NOON: Skeptics Groups Discussion

Additional Sunday events to be announced.

Cooperating organizations: East Bay Skeptics Society and Berkeley Student Skeptics

REGISTRATION FORM

Preregistration is advised. (U.C. Berkeley students and faculty, no charge. Other students, 25 and under, with I.D., $25.00.) (Registration fee does not include meals or accommodations.) Mail to:

1991 CSICOP Conference, P.O. Box 229, Buffalo, New York 14215

☐ **YES, I (we) plan to attend the 1991 CSICOP Conference.**

☐ $125 registration for _____ person(s), includes Keynote Address. $ _____

☐ $22.50 Saturday Luncheon for _____ person(s) $ _____

☐ $39 Saturday Awards Banquet for _____ person(s) $ _____

☐ $10 Keynote Address (this fee is for nonregistrants only) for _____ person(s) $ _____

☐ Will require bus transportation to Keynote Address.

☐ $5 chartered bus transportation trip to Chabot Observatory for _____ person(s). (Reservations limited.) $ _____

Total $ _____

☐ Charge my ☐ VISA ☐ MasterCard ☐ Check enclosed (Amt.) $ _____

Acct. # _____ Exp. _____

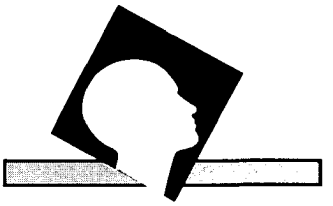
☐ No, I will not be able to attend the conference, but please accept my contribution (tax-deductible) of $ _____ to help cover the costs of this and future CSICOP special events.

Note: The CSICOP Hospitality Room on the lobby floor of the hotel will be open at 5:00 P.M. on Thursday, May 2 (cash bar 7:30 to 11:00 P.M.). This room will be available to registrants for the duration of the conference.

ACCOMMODATIONS: Claremont Resort and Tennis Club, Ashby & Domingo Avenues, Oakland. Telephone 415-843-3000. Single $99, double $99. (The hotel will arrange shared doubles upon request.) Facilities include an olympic-sized heated swimming pool, whirlpool spa, saunas, jogging course, ten day/night tennis courts (complimentary to guests), and four restaurants and a terrace bar. (Registrants will be provided with list of other nearby restaurants.)

For more information, call or write to Mary Rose Hays at the CSICOP, Box 229, Buffalo, New York 14215 / Telephone: 716-834-3222.

Notes of a Fringe-Watcher



MARTIN GARDNER

Tipler's Omega Point Theory

Frank Tipler is a professor of mathematical physics at Tulane University, New Orleans. He has edited a book of papers on relativity and coauthored *The Anthropic Cosmological Principle*, a 706-page work published by Oxford University Press in 1986. Among scientists he is best known for his vigorous opposition to the hopes of Carl Sagan and others that intelligent life flourishes elsewhere than on earth.

In recent years Tipler has been writing papers about what he calls his Omega Point Theory (OPT), research on which has been partly supported by the National Science Foundation. Here is his abstract of "The Omega Point as *Eschaton*," a paper in *Zygon* (vol. 24, June 1989):

> I present an outline of the Omega Point Theory, which is a model for an omnipresent, omniscient, omnipotent, evolving, personal God who is both transcendent to spacetime and immanent in it, and who exists necessarily. The model is a falsifiable physical theory deriving its key concepts not from any religious tradition but from modern physical cosmology and computer science; from scientific materialism rather than revelation. Four testable predictions of the model are given. The theory assumes that thinking is a purely physical process of the brain, and that personality dies with the brain. Nevertheless, I show that the Omega Point Theory suggests a future universal resurrection of the dead very similar to the one predicted in the Judeo-Christian-Islamic tradition. The notions of "grace" and the "beatific vision" appear naturally in the model.

If our universe is "open" it will expand forever. Eventually it will expire from the cold and all life will end. Tipler assumes that the universe is "closed" in the sense that space-time is positively curved by vast amounts of dark (invisible) matter. All closed universes will stop expanding and go the other way toward a big crunch. In most cases, this, too, would wipe out all life and all "memory" of the past. But there are special classes of closed universes (too technical to go into here) in which the recollapse leads to a special type of "crunch" that Tipler calls the Omega Point, borrowing the term from the unorthodox French paleontologist Teilhard de Chardin. At the Omega Point the temporal becomes eternal, and the entire cosmos is "engulfed" by total information about the universe's history.

This kind of universe, Tipler

argues, necessarily exists. According to what he calls the Final Anthropic Principle, it is capable of sustaining life indefinitely. God, or the Omega Point—for Tipler the terms have the same meaning—is a "singularity" of space and time, in a region that traditional religions call "eternity." When this stage is reached, the universe will have become a "Person" who experiences all history in one blinding "now." Such a God will be omnipresent in occupying every part of the universe, omniscient in knowing all that can be known, and omnipotent in being able to do all that can be done.

Tipler prides himself on being an atheist in the sense that he is not a theist, nor does he believe that there is any experimental evidence for his Omega Point god. Tipler has in effect joined the ranks of distinguished "process theologians"—Schelling, Alexander, Whitehead, Bergson, Hartshorne, and others—who see God as evolving as the universe evolves. Not until the end of history, at the Omega Point, does everything become a Personal Ultimate Reality. From our perspective, God is "forever growing in knowledge and power." From the Omega Point's perspective, God is the great I AM, "forever complete and unchanging."

> But all timelike and lightlike curves converge upon the Omega Point. In particular, all the light rays from all the people who died a thousand years ago, from all the people now living, and from all the people who will be living a thousand years from now, will intersect there. The light rays from those people who died a thousand years ago are not lost forever; rather, these rays will be intercepted by the Omega Point. To put it another way, these rays will be intercepted and intercepted again by the living beings who have engulfed the physical universe near the Omega Point. All the information which can be extracted from these rays will be extracted at the instant of the Omega Point, who will therefore experience the whole of time simultaneously just as we experience simultaneously the Andromeda Galaxy and a person in the room with us.

Tipler is a materialist in the sense that he follows Aristotle in regarding the "soul" as the body's "form"—the pattern of molecules in a brain. We are computers made of organic matter. Our "self" is no more than an enormously complex computer program. When we die we are truly dead, but our program is not lost. The Omega Point is capable of "resurrecting" every person who ever lived simply by giving that person's pattern a new, transcendent body. Here Tipler adopts the view known as "conditional immortality" or "soul sleeping." It was probably the view of St. Paul, and has been upheld by thinkers as diverse as Karl Barth and John Milton, as well as by such modern Christian sects as the Seventh-Day Adventists and Jehovah's Witnesses.

Because the brain's pattern derives from a set of discrete genes, and because there are only a finite number of possible brain states, not only can God recreate all persons who ever lived, but also all who *could* have lived. Tipler finds this possibility enhanced by the Many Worlds Interpretation of quantum mechanics. In this view, which Tipler strongly favors, the universe is constantly branching into myriads of different histories in which all logically possible events occur and all logically possible universes and life forms exist. "Just as there is an infinity of actual paths which have led to the present state, so there is an infinity of really existing futures which evolve from the present state."

Because the universe gets hotter as it nears the Omega Point, where temperature goes to infinity, it will reach a stage at which life as we know it cannot survive. Our heirs, therefore, will have to be a markedly different species. Tipler believes that within a century, "certainly within a thousand years," we will be able to transfer our mind patterns to computers. Organic life will perish. Computers will be the new life forms. Because at the Omega Point all their programs, as well as all our programs, are preserved, the Omega Point will resurrect each of us provided it has sufficient "grace" to do so. "We shall, so to speak, live again in the mind of God." As Tipler puts it in a later paper, "We will be granted eternal life because it is probable that the Omega Point loves us!"

> I should emphasize that this simulation of people that have lived in the past need not be limited to just repeating the past. Once a simulation of a person and his or her world has been formed in a computer of sufficient capacity, the simulated person can be allowed to develop further—to think and feel things that the long-dead original person being simulated never felt and thought. It is not even necessary for *any* of the past to be repeated. The Omega Point could simply begin the simulation with the brain memory of the dead person as it was at the instant of death (or, say, ten years before or twenty minutes before) implanted in the simulated body of the dead person, the body being as it was at age twenty (or any other age). This body and memory collection could be set in any simulated background environment the Omega Point wished: a simulated world indistinguishable from the long-extinct society and physical universe of the revived dead person; or even a world that never existed, but one as close as logically possible to the ideal *fantasy* world of the resurrected dead person. Furthermore, all possible combinations of resurrected dead can be placed in the same simulation and allowed to interact. For example, the reader could be placed in a simulation with *all* of his or her ancestors and descendants, each at whatever age (physical and mental, separately) the Omega Point pleases. The

Omega Point itself could interact—speak, for instance—with His/Her simulated creatures, who could learn about Him/Her, about the world outside the simulation, and about other simulations, from Him/Her.

The simulated body could be one that has been vastly improved over the one we currently have; the laws of the simulated world could be modified to prevent a second physical death. Borrowing the terminology of Paul, we can call the simulated, improved and undying body a "spiritual body," for it will be of the same "stuff" as the human mind now is: a "thought inside a mind" (in Aristotelian language, "a form inside a form"; in computer language, a "virtual machine inside a machine"). The spiritual body is thus just the present body (with improvements!) at a higher level of implementation. With this phrasing, Paul's description is completely accurate: "So also is the resurrection of the dead. It is sown in corruption; it is raised in incorruption: It is sown in dishonor; it is raised in glory; it is sown in weakness; it is raised in power: It is sown a natural body; it is raised a spiritual body" (1 Cor. 15:42-44). Only as a spiritual body, only as a computer simulation, is resurrection possible without a second death: our current bodies, implemented in matter, could not possibly survive the extreme heat near the final singularity. Again, Paul's words are descriptive: ". . . flesh and blood cannot inherit the kingdom of God" (1 Cor. 15:50).

Nevertheless, it is appropriate to regard computer simulation resurrection as being a "resurrection of the flesh" (in the words of the Apostles' Creed). For a simulated person would observe herself to be as real, and as having a body as solid as the body we currently observe ourselves to have. There would be nothing "ghostly" about the simulated body, and nothing insubstantial about the simulated world in which the simulated body found itself. In the words of Tertullian, the simulated body would be ". . . this flesh, suffused with blood, built up with bones, interwoven with nerves, entwined with veins [a flesh] which . . . [is] . . . undoubtedly human."

In a later, unpublished paper, "Physics Near the Final State: God and the Resurrection of the Dead to Eternal Life," Tipler defends the possible existence of "realms that can be accurately described as Heaven and Purgatory." (Only the Omega Point knows if there is a Hell.) "A Christology can be developed in the Omega Point Theory, but it does not appear naturally in the model, and in any case the Christology depends on some unlikely possibilities in quantum cosmology."

Will there be sex in heaven? In the paper just cited, Tipler says this question is often asked by his students. The answer, he assures us, is yes. "Sex will be available to those who wish it. . . . A man like Aquinas who had no interest in sex will not experience it, but people who desire it will." However, all the difficulties that arise in our sex life now "will not exist for the resurrected humans, since the Omega Point can match people: the Omega Point should be able to calculate which amongst all possible people would be the best mate for a given person."

To put it more dramatically (for unmarried males), it would be possible for each male to be matched not merely with the most beautiful woman in the world, not merely with the most beautiful woman who has ever lived, but to be matched with the most beautiful woman whose existence is logically possible! Because of the mutability of the appearance of the resurrection body,

it would be easy to ensure that said male is also the most handsome (or desirable) man to this most beautiful woman (provided the man has spent sufficient time in Purgatory to correct personality defects).

As for "elbow room" in heaven, Tipler speculates:

> It would be possible for the Omega Point to simulate an entire visible universe for the personal use of each and every resurrected human! ("In my Father's house are many mansions. . . ." The required computer capacity is not measurably greater than that required to simulate all possible visible universes ($10^{10^{123}}$). Each private visible universe could also be simulated to contain 10^{10} separate planet Earths, each a copy of the present Earth, or the Earth as it was at a different time in the past. (There are about 10^{20} stars in the visible universe, so replacing a mere 10^{10} solar systems in a visible universe would be a minor modification.) This is more Earths than a single human could explore before exhausting his/her memory storage capacity of 10^{15} bits, to say nothing of the memories stored while visiting other humans in *their* private universes.

Thus does Tipler construct a colorful eschatology that he believes is based entirely on science. Theology has become a branch of physics. Tipler cites several ways his theory can be empirically tested, starting with observations to determine the universe's space-time curvature. If it turns out not to be closed, then the OPT will of course be falsified. So far, he concedes, because there is as yet no confirming evidence for the OPT "it is premature to accept it."

Although Jesus, the Bible, the Koran, and all other forms of revelation play no role in the OPT, Tipler (as we have seen) likes to invoke Paul—Saint Paul!—as a supporter of his vision. "The key concepts of the Judeo-Christian-Islamic traditions," he writes, "are now scientific concepts." Here is how Tipler concludes his 1989 paper:

> The hope of eternal worldly progress and the hope of individual survival beyond the grave turn out to be the same. Far from being polar opposites, these two hopes require each other; we cannot have one without the other. The Omega Point is truly the God of Hope: "O death, where is thy sting? O grave, where is thy victory?" (1 Cor. 15:55)

I leave it to readers to decide whether they should opt for OPT as a new scientific religion superior to Scientology—one destined to elevate Tipler to the rank of a prophet greater than L. Ron Hubbard—or opt for the view that OPT is a wild fantasy generated by too much reading of science fiction.

Martin Gardner's most recent book is The New Ambidextrous Universe: Symmetry and Asymmetry, from Mirror Reflections to Superstrings.

CSICOP 1990 Washington, D.C. Conference on Audio Cassettes

"Critical Thinking and Scientific Literacy"

Complete Conference, Sessions I-VIII, $79.95, a saving of $15.25

SESSION I: **Scientific Literacy,** with Paul Kurtz, Michael Zimmerman, John Paulos, Robert Crease (2 cassettes, **$11.90**)

SESSION II: **Critical Thinking in Public Education,** with Paul MacCready, Anton Lawson, Richard Schrock, Steven Hoffmaster. (2 cassettes, **$11.90**)

SESSION III: **(1) Public Policy and the Paranormal,** with Ray Hyman. **(2) Everything You Ever Wanted to Know About UFOs But Were Afraid to Ask,** with Philip J. Klass (3 cassettes, **$17.85**).

SESSION IV: **Keynote Address by Gerard Piel** (1 cassette, **$5.95**)

SESSION V: **Astronomy and Pseudoscience,** with Philip Ianna, Andrew Fraknoi, David Morrison, Bernard Leikind (2 cassettes, **$11.90**)

SESSION VI: **Psychic Phenomena and the Laws of Physics,** with James Alcock, Milton Rothman, Robert Jahn, and Victor Stenger (3 cassettes, **$17.85**)

SESSION VII: **Animal Rights and Scientific Research,** with Lee Nisbet, Randall Lockwood, Larry Horton, Franklin Loew, Donald J. Barnes, and Richard Malvin (2 cassettes, **$11.90**)

SESSION VIII: **Awards Banquet,** with Paul Kurtz, Richard Berendzen, Bill Nye the "Science Guy," James Randi, Penn & Teller (2 cassettes, **$11.90**)

ORDER FORM

1990 CSICOP Conference in Washington, D.C.

☐ SESSION I	$11.90	☐ SESSION IV	$5.95	☐ SESSION VII	$11.90
☐ SESSION II	$11.90	☐ SESSION V	$11.90	☐ SESSION VIII	$11.90
☐ SESSION III	$17.85	☐ SESSION VI	$17.85		

(When ordering individual sessions, please add $1.50 for 1st class postage and handling for each session, or $3.75 for 3 or more.)

☐ Please send the complete set for $79.95 + $3.75 for 1st class p&h.

Total **$83.70.** Total $_____

☐ Check enclosed Grand Total $_____

Charge my ☐ Visa ☐ MasterCard #_____ Exp._____

Name_____

Address_____

City_____ State_____ Zip_____

CSICOP • Box 229 • Buffalo, NY 14215-0229

Or call toll free 800-634-1610.

In New York State call 716-834-3222.

CENTER FOR INQUIRY INSTITUTE

Summer Session 1991 — Wed.-Sun., June 19-23
at the State University of New York at Buffalo

The Center for Inquiry Institute is jointly supported by CSICOP and CODESH, two scientific and educational nonprofit organizations. The Institute offers courses and curricula to develop knowledge and appreciation of skepticism, rationalism, free thought, and scientific modes of inquiry. The Summer session will offer three courses: Case Studies in the Paranormal (CSICOP), Evolution vs. Creationism (CSICOP-CODESH), and Humanist Ethics (CODESH). Participants can register for one course ($125), two courses ($225), or three courses ($300). Accommodations, meals, and textbooks are not included.

Wednesday, June 19

7:00-10:00 P.M.: Reception

Thursday, June 20

9:00 A.M.-12:00 NOON: Humanist Ethics

Paul Kurtz, professor of philosophy, SUNY at Buffalo
Marvin Kohl, professor of philosophy, State University of New York College at Fredonia
Tim Madigan, executive editor, FREE INQUIRY

12 NOON-1:00 P.M.: Luncheon Break

1:00-4:00 P.M.: Evolution vs. Creationism

Eugenie Scott, physical anthropologist, executive director, National Center for Science Education
H. James Birx, professor of anthropology, Canisius College

4:30-7:30 P.M.: Case Studies in the Paranormal

James Randi, author, magician
Steve Shaw, magician
Barry Karr, executive director of CSICOP

7:30-10:00 P.M.: Dinner and Open Forum

Friday, June 21

Courses continue; repeat of Thursday schedule.

Saturday, June 22

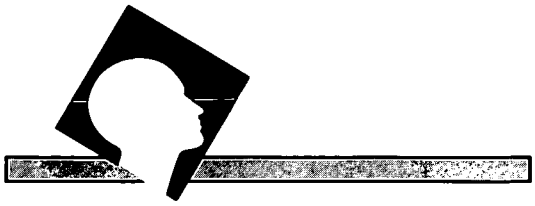
8:30-10:00 A.M.: Humanist Ethics (continued)
10:00-11:30 A.M.: Evolution vs. Creationism (continued)
11:30A.M.-1:00 P.M.: Case Studies in the Paranormal (continued)
1:00-10:00 P.M.: Canadian trip (optional)
A visit to Niagara Falls and to the Shaw Festival Theatre at Niagara-on-the-Lake, Ontario, Canada

Sunday, June 23

9:00A.M.-12 NOON: Humanist Ethics (continued)
12 NOON-1:00 P.M.: Luncheon
1:00-4:00 P.M.: Evolution vs. Creationism (continued)
4:30-7:30 P.M.: Case Studies in the Paranormal (continued)
7:30-10:00 P.M.: Dinner and entertainment

For registration form and accommodations information, contact Ranjit Sandhu, CSICOP, Box 229, Buffalo, NY 14215, 716-834-3222.

Psychic Vibrations



ROBERT SHEAFFER

A great deal has been happening in Gulf Breeze, Florida, the now-undisputed UFO capital of the world, since it was last mentioned in this column (Summer 1989:363). "Mr. Ed," the once-anonymous photographer around whom alien beings and their craft seemed to swarm, has now surfaced as building contractor Ed Walters, who with his wife, Frances, is coauthor of a successful book, *The Gulf Breeze Sightings: The Most Astounding Multiple Sightings of UFOs in U.S. History.* Despite its title, the book seems to have been singularly unsuccessful in convincing anyone of the authenticity of Walters's Polaroid saucer photos who wasn't convinced already. The book has been attacked bitterly by a number of seasoned, longtime UFO proponents, many of whom are still shaking their heads sadly at the way MUFON—the largest surviving UFO group—has uncritically promoted Walters's yarns. Whatever faults the book may have, it was good enough to earn Walters a $200,000 advance, according to news reports, as well as the sale of TV rights for a planned miniseries that may net as much as $450,000.

In spite of this abundance of wealth and fame, life has not been a bed of roses for Gulf Breeze's most famous citizen. This past June, the *Pensacola News Journal* reported that the man who now lives in the house Walters occupied at the time of the alleged alien blitz had discovered a model flying saucer, apparently forgotten, hidden away under some insulation in the garage attic. Using this model, news photographers were able to create numerous photos of UFOs looking remarkably like those that thrust Ed Walters into the limelight. Walters, of course, denies all knowledge of the model, even though paper wrapped around it contains part of a house plan he himself drew up. He claims that particular plan was not drawn up until after he vacated the residence, but Gulf Breeze city officials say the plans are two years older than Ed says they are. Walters suggests that the model was probably planted in his former residence by some "debunker" who, he insists, "will do whatever [is] necessary to debunk a case." If so, one would expect a dastardly debunker to leave the incriminating model in a place where it would likely be found, and not so well concealed that it was not discovered until the current resident of the house undertook to modify the cooling system.

But in a development even more potentially damaging to Ed's credibility than the discovery of the model, a Gulf Breeze youth named Tom Smith has confessed that he and two other youths, one of them Ed's son Danny Walters, assisted Ed in the production of hoax saucer photos. Worse yet, Smith has a series of five UFO photos taken with his own camera to substantiate this collabora-

tion. But Walters claims that young Smith took the UFO photos unassisted and that they are genuine. Veteran saucerer James Moseley became outraged when Charles Flannigan, MUFON's Florida State Director, ordered him not to talk to any of these youths until the MUFON hierarchy had a chance to interview them first! Moseley charges MUFON with practicing "damage control" by its insistence on getting to the youths first "in order to plug up any holes in their stories." Nonetheless, Moseley is still impressed by Ed Walters's apparent sincerity and is not convinced that the Gulf Breeze UFO photos were faked.

* * *

You've probably seen the Rosicrucians' ads offering to help you unlock the Secrets of the Pyramids and the deep Mysteries of the Cosmos. But a July 1 story in the *San Jose Mercury News* suggests that the Rosicrucian sect seems to be unable to comprehend the puzzle of its own financial assets (of which it has plenty). At its headquarters in San Jose, the group operates a decent science museum and an excellent mummy exhibit strangely coexisting with a school of arcane mysticism. It has assets worth somewhere between $11 million and $28 million, but apparently lacks the mystical insight to determine anything approaching an exact figure. Last April a group of disgruntled Rosicrucians obtained a court order ousting the Imperator of that sect, Gary L. Stewart, charging him with embezzling $3.5 million, which they claim he squirreled away in the Republic of Andorra. They further charge that Rosicrucian funds were used to pay for Stewart's divorce from his first wife, as well as for his honeymoon with his second. A lawyer representing Stewart denies these allegations.

The Rosicrucian Order claims to trace its roots back to a group originating around 1500 B.C. that supposedly possessed the Secrets of Ancient Egypt. However, little is known of the group's whereabouts until it surfaced again in New York City in 1915, which merely demonstrates how well its secrets have been guarded. These same secrets are today available to anyone who discovers a Rosicrucian ad in a magazine and forks over $135 a year. Exactly what insights the initiate receives in exchange for that sum is so secret that the Rosicrucians have never revealed them. However, owing to the brotherhood's laxity in guarding its deep mysteries, it has been learned that students of Rosicrucian science sometimes receive little experiment kits, not unlike the ones sold in toy stores, allowing them to experience for themselves the wonders of magnetism, electricity, and other secrets known to the wise men of Ancient Egypt. ■

Belief in Paranormal Phenomena Among Adult Americans

GEORGE H. GALLUP, JR., and FRANK NEWPORT

Americans express a belief in the existence of paranormal, psychic, ghostly, and otherworldly experiences and dimensions to a surprising degree. These beliefs, including many that contradict more traditional religions, are almost as common among Americans who are deeply religious in a traditional sense as in those who are not.

Also, according to a new Gallup Mirror of America survey, a majority of Americans are unaware of the New Age movement, and those who are aware have a more negative than positive view of its impact on American religion and society.

The poll of 1,236 adults conducted in June 1990 reveals that:

- One of every four Americans believe in ghosts.
- One of every four Americans believe they have had a telepathic experience in which they communicated with another person without using the traditional five senses.
- One in six Americans have felt they have been in touch with someone who had died.
- One in ten claim to have seen or been in the presence of a ghost.
- More than half believe in the Devil, and one in ten claim to have talked to the Devil.
- One in seven say they have personally seen a UFO (unidentified flying object).
- Three in four at least occasionally read their horoscopes in a newspaper, and one in four say they believe in the tenets of astrology.

A Gallup national survey shows that paranormal beliefs are widespread. Yet belief in astrology and the reality of UFOs has lessened, superstitions are widely disbelieved, and the New Age movement is unadmired.

For each of the following items I am going to read you, please tell me whether it is something you believe in, something you're not sure about, or something you don't believe in.

	Believe %	Not sure %	Do not believe %
In déjà vu, or the feeling that you have been somewhere or done something before	55	13	32
In the Devil	55	8	37
In ESP, or extrasensory perception	49	22	29
That people on this Earth are sometimes possessed by the Devil	49	16	35
In psychic or spiritual healing or the power of the human mind to heal the body	46	20	34
In telepathy, or communication between minds without using the traditional five senses	36	25	39
That houses can be haunted	29	17	54
That extraterrestrial beings have visited Earth at some time in the past	27	32	41
In clairvoyance, or the power of the mind to know the past and predict the future	26	23	51
In astrology, or that the position of the stars and planets can affect people's lives	25	22	54
In ghosts, or that spirits of dead people can come back in certain places and situations	25	19	56
In reincarnation, that is, the rebirth of the soul in a new body after death	21	22	57
That people can hear from or communicate mentally with someone who has died	18	20	62
In telekinesis, or the ability of the mind to move or bend objects using just mental energy	17	24	59
In witches	14	8	78
In channeling, or allowing a "spirit being" to temporarily assume control of a human body during a trance	11	22	67
That pyramids have a special healing power	7	26	67
That rock crystals have a special healing power	4	20	76

Americans have always been fascinated by the idea that there is something beyond the traditional world of experience. These "out of the normal" experiences can involve many different types of occurrences. Some are called "psychic" phenomena or, as author Bernard Gittelson describes them, "anything that appears to overstep the confines of known physical laws." These include such unusual mental experiences as telepathy, clairvoyance, precognition, déjà vu, telekinesis, and the ability of the mind to control and heal the physical body.

Other "out of the normal" experiences involve the belief that our lives can be controlled by superstitious occurrences or, in the case of believers in astrology, by the positions of planets and stars. Still others involve the mysterious realm of death—and

what happens to humans when they die; whether or not they return in various forms and shapes, and whether or not we can communicate with them. And there is the unknown beyond our planet, including UFOs, visits by extraterrestrials, and the possibility of life on other planets.

All of these types of beliefs and occurrences contradict our physical senses and what is known "rationally." Those who follow psychic and paranormal phenomena claim that they are occurring all around us. As Gittelson says in his book *Intangible Evidence*, "Evidence of seemingly paranormal goings-on come in from all over—from many different fields, from many different belief systems, and from all corners of the world."

The results of the survey seem to support the fact that Americans are very much aware of this type of evidence. All in all, only 7 percent of Americans deny believing in any of a list of 18 paranormal experiences asked by Gallup. Almost one-half say they believe in five or more. And, even though actual experience is less frequent than belief, three of four have experienced at least one such occurrence, with about half claiming experience with more than three.

Who are these believers in the paranormal?

They tend to be baby-boomers and the middle-aged, particularly those between the ages of 30 and 49. Belief in "paranormal" experiences cuts across conventional religious measures: almost as many deeply religious Americans as those who are not religious profess belief in and experience with the paranormal.

Paranormal Beliefs—Trend
(Percent who believe in each item)

	1978	1990
	%	%
ESP	51	49
Devils	39	55
Déjà vu	30	55
Astrology	29	25
Clairvoyance	24	26
Ghosts	11	25
Witches	10	14

Psychic Experiences

The idea that our minds alone—without using the traditional five senses—can perform extraordinary feats or are privy to abilities that we

have barely begun to tap has fascinated us for many years. Scientists don't claim to understand fully how the brain works, and therefore most do not rigorously rule out the idea that there are parts of it that we don't routinely use or activate.

The new Gallup survey shows that a good number of Americans believe they are already activating their psychic awareness. By far the most common such psychic phenomenon is the feeling of déjà vu, that a person has been somewhere or done something before. [Editor's note: Most psychologists do not consider déjà vu a "psychic" or paranormal phenomenon.] Some have attempted to explain this occurrence as a biological one in which brain synapses undergo a brief delay so that we actually sense the same event twice. Others feel that déjà vu is evidence of either reincarnation or some form of reliving lives. Whatever the explanation—if any—it is a sensation known to millions. More than one-half of all Americans (57 percent) claim to have experienced déjà vu.

Feelings of déjà vu are most common among the young. It is almost twice as likely to have occurred among Americans 18 to 29 years of age as among Americans over 50. It also is reported more often among those living on the West Coast and apparently reflects socioeconomic status, in that it is more likely to be reported by college graduates and those with higher incomes than the less well educated and those with lower incomes.

Another very common psychic belief among Americans is that the mind can actually participate in healing the body. This belief is now becoming more common in the orthodox medical community as anecdotal evidence and the experiences from other cultures and religions accumulate that suggest the mind can in fact have a major influence on the body and its processes.

About one-half of Americans polled by Gallup (46 percent) believe in this spiritual or psychic power, although only one-quarter (25 percent) claim to have actually experienced a situation in which they healed their body by mental processes alone.

The idea of mental communication between two people, living or dead, without using the traditional five senses of sight, hearing, smell, touch, or taste is another form of psychic phenomenon that has intrigued us through the centuries. Tales abound of mothers who rush across town because they sense their baby is in need, or of lovers who somehow know their partner is in danger, or those who know who is on the phone before they pick it up.

Carl Shrager, editor of *American Psychic* magazine, says, "Telepathy is really our sixth sense, the shadow sense that people accept to varying degrees. Knowing who's on the phone when it rings is the most common everyday telepathic experience."

More than a third (36 percent) of Americans say they believe in telepathy, or communicating with others without using the five senses. One of four (25 percent) claim to have actually had a telepathic experience.

Almost one of every five Americans say they believe it is possible to communicate with the dead, and 17 percent say they have felt in touch with someone who has already died.

Belief in clairvoyance, or the ability to forecast the future, is reported by about one in four Americans. Not all of these people put their money where their mouth is, however. Only about 14 percent of them say that they have actually consulted a fortune-teller or

Now, as I read another list, I want you to tell me whether or not you have ever had each of these types of experiences. First, have you ever:

	Yes	No	No opinion
	%	%	%
Had the feeling of déjà vu and felt you had been somewhere or done something before	56	42	2
Felt that you were in touch with or getting a message from someone who was far away without using the traditional five senses	25	74	1
Been able to heal your body using the power of your mind without traditional medicine	25	72	3
Felt that you were in touch with someone who has already died	17	82	1
Consulted a fortune-teller or psychic	14	85	1
Been in a house you felt was haunted	14	85	1
Felt you were talking to or being talked to by the Devil	10	89	1
Seen or been in the presence of a ghost	9	90	1
Felt that you were here on Earth in a previous life or existence in another body	8	90	2
Personally seen someone moving or bending an object using just mental energy	7	92	1
Consulted an astrologer	6	93	1
Bought or used a rock crystal for its special healing powers	3	96	1
Been personally involved in channeling, by participating in a trance during which a "spirit-being" temporarily assumed control of your body	2	97	1
Bought or used a pyramid for its special healing powers	1	98	1

psychic.

A belief in telekinesis—the ability of the mind to move or change physical objects—is not as widespread. Only about 17 percent think it is possible—with a smaller 7 percent saying they have actually witnessed telekinesis.

Superstitions and Astrology

Superstitious people assume that such everyday events or occurrences as a black cat crossing one's path and the breaking of a mirror can affect their lives. Those who believe in astrology feel that the cosmic forces behind the positions of planets and stars are determining factors in what happens in our daily lives ("The horoscope is a mandala, a symbol of the personal imprint of the quality of energy operable in the universe at the time of birth," according to one New York City astrologer).

Superstitious behavior and astrology are probably the most commonly talked-about aspects of paranormal or "out of the ordinary" phenomena in American society. Yet, the new Gallup

Poll shows that, perhaps surprisingly, belief in these phenomena is no more prevalent than belief in other, seemingly more esoteric experiences measured, such as telepathy and sightings of UFOs.

Fewer than one out of five Americans (18 percent) admits to being very or somewhat superstitious. Another one in four claims to be "not very" superstitious, with over one-half—56 percent—saying that they are not at all superstitious.

It may be that age and experience serve to diminish superstitious behavior. The most superstitious Americans are those under 30 years of age, of whom 28 percent say they are very or somewhat superstitious. Catholics are slightly more superstitious than Protestants, blacks are more superstitious than whites, and, in general, there is a tendency among those who are more religious to claim they are the least superstitious.

The most common American superstition is the fear of bad luck when a black cat crosses one's path. The top six superstitions, as reported to Gallup:

- A black cat crossing one's path (mentioned by 14 percent of those who said they were at least a little superstitious).
- Walking under a ladder (12 percent).
- Friday the 13th, or things happening in threes (9 percent).
- Breaking a mirror (5 percent).
- Attempting to wear certain types of clothing or avoiding certain types to obtain good luck (2 percent).
- Believing that speaking or thinking ill or good about an event or person will make something happen (2 percent).

About one in four Americans say they believe in the basic premises of astrology—that the positioning of stars and planets can have some impact on one's daily life. This is down slightly from Gallup's 1978 measure of belief in astrology. One in four Americans also regularly read their horoscopes (26 percent read it at least once a week or more), about the same as astrology-column measures in 1975 and 1988.

Some people are superstitious and try to behave in such a way as to avoid bad luck or "jinxing" themselves, and others are not. How superstitious are you? Would you say you are:

	%
Very superstitious	3
Somewhat superstitious	15
Not very superstitious	26
Not at all superstitious	56
No opinion	*
	100

*Less than 0.5%

And what one or two superstitions affect you most?

	%
Black cat crossing path	14
Walking under a ladder	12
Numbers/Friday 13th/Bad things happening in threes	9
Breaking a mirror	5
Wearing a special or lucky clothing/dress in a certain order/avoidsome colors	2
Speaking ill or good about a person or event makes it happen	2
Picking up pennies/coins	1
Following horoscope	1
Evil/the devil	1
Knocking on wood	1
Telepathy/ESP	1
Other	11
None	4
No opinion	52

Note: Totals add to more than 100% due to multiple responses.

Do you ever read your horoscope in a newspaper or magazine, or not? (If Yes:) Do you read it every day, a couple of times each week, once a week, once a month, or just every once in a while?

	%
Yes, every day	10
Yes, a couple of times each week	10
Yes, once a week	6
Yes, once a month	5
Yes, just every once in a while	43
No	26
No opinion	*
	110

*Less than 0.5%

Do you happen to read any astrology column regularly?

	1988*	1975
	%	%
Yes	25	23
No	71	77
No opinion	4	0
	100	100

*Note: Sample size is 500.

Women are slightly more likely to read horoscopes than men, older people are more likely than the young, and those with less education are more likely than those with college degrees. Belief in astrology is only slightly less common among churchgoers, evangelicals, and those to whom religion is very important in their lives than it is among nonbelievers.

Nonetheless, there must be some passing fascination with astrology even among those who don't profess to believe in it—the Gallup Poll shows that 74 percent of Americans admit to at least occasionally looking at their horoscopes.

Life After Death

What happens when we die? Since the dawn of humanity, this question has been of tremendous importance to humans focusing on their own mortality. Some psychiatrists speculate that dealing with death is the central psychological force in our lives. Anthropologists and sociologists theorize that dealing with death is the common motif among almost all religions studied across cultures and historical time periods.

One thing is clear from Gallup Poll data: relatively few Americans want to admit that it is all over when death occurs. More than 70 percent believe in life after death—a number which is now only slightly less than the percent found by Gallup in repeated measurements since World War II.

If there is life after death, what form does it take? Of course there are the traditional concepts of heaven and hell—and past Gallup Polls show that seven out of ten believe in heaven, and about half believe in hell.

But a good number of Americans believe that there may be less conventional things that happen to us when we die. One out of five Americans (21 percent) believe in reincarnation—the "rebirth of the soul in a new body after death"—a concept significantly different from the traditional life-after-death beliefs that form the central component of mainstream Protestant and Catholic theology in this country.

Despite this, belief in reincarnation cuts across all of Gallup's traditional religious measures: it is believed in by 24 percent of Catholics, 19 percent of Protestants, 21 percent of church members, 18 percent of those who attend church regularly, and 22 percent of all those who are "born-again" Christians. About one in ten

Americans, in fact, go so far as to say that they themselves feel that they were here on Earth in a previous life or existence in another body.

What about communicating with the dead? According to the Gallup Poll, this type of experience is not necessarily out of the question to a good number of Americans: 17 percent feel they have "been in touch with someone who has already died," and a total of 18 percent say it is possible even if they have not experienced it themselves.

Is it possible that after death we come back in a more ghostly or spiritual form? A surprising one in four Americans believes in ghosts—defined as "spirits of the dead who come back in certain places and in certain situations." One in ten claims to have seen or actually been in the presence of a ghost, and 14 percent have been in a house they felt was haunted.

The Devil and Witches

A majority of Americans claim adherence to a form of a Christian religion, in which the concepts of heaven and hell, God and the Devil are central components. It is therefore not surprising that Americans maintain a generally persistent belief in the existence of the Devil. More than one-half of Americans (55 percent) believe in the Devil, a number that has not changed markedly over time. Belief in the Devil is strongly prevalent among American Protestants, those who are "born-again," and those to whom religion is very important.

About half of Americans go so far as to say that people are sometimes possessed by the Devil.

Witches don't fare as well. Only 14 percent believe in witches, slightly up from the 10 percent Gallup measured in 1978.

UFOs

Our "normal" frames of reference and understanding of the world around us would probably undergo the greatest disruptions if we ever discover and/or are visited by intelligent life from planets other than our own.

To about one-half of all Americans, the question is *when* we come into contact with extraterrestrial beings, not *if*. Forty-six percent of Americans believe that there are people somewhat like ourselves living on other planets in the universe." This number is essentially the same as measured by Gallup in 1973, and thus has apparently not been affected by our increasingly sophisticated exploration of our solar system and universe.

Despite this stability in belief in intelligent life elsewhere in the universe, the percent of Americans who believe that UFOs are real has decreased to 47 percent today, down from 57 percent in 1978 and 54 percent in 1973. At the same time, the percent of Americans who say they have seen a UFO is up, to 14 percent from 9 percent and 11 percent in previous years.

For those who believe they have seen a UFO, the remembrances are vivid. A 40-year-old woman in New Hampshire, interviewed by Gallup, recalls: "We saw a flashing thing in the sky on a hot summer night. There were quite a few of us who saw it. We called the *Boston Globe* and apparently there were quite a few other sightings that night. Of course, everyone thought we were nuts."

Or, as a woman in California recounts: "When I was real small, I was on a trip with my parents. We were out in the country and the car quit and a bright light took off and then the car was able to start again. It was very strange and we never talked about it."

Have you heard or read about unidentified flying objects—UFOs?

	1973 %	1978 %	1990 %
Yes	95	93	90
No	5	7	10
	100	100	100

Have you, yourself ever seen anything you thought was a UFO?

	1973 %	1978 %	1990 %
Yes	11	9	14
No	89	91	85
No opinion	*	*	1
	100	100	100

*Less than 0.5%

In your opinion, are UFOs something real, or just people's imagination?

	1973 %	1978 %	1990 %
Real	54	57	47
Imagination	30	27	31
No opinion	16	16	22
	100	100	100

Do you think there are people somewhere like ourselves living on other planets in the universe or not?

	1973 %	1978 %	1989 %	1990 %
Yes	46	51	41	46
No	38	33	48	36
No opinion	16	16	11	18
	100	100	100	100

Belief that there is intelligent life elsewhere in the universe and that UFOs are real apparently does not mean that this intelligent life has actually touched the Earth's surface. A much smaller percent of Americans (27 percent) feel that aliens have actually touched down and visited Earth.

The New Age

Many of the types of psychic and paranormal phenomena measured in the new Gallup Mirror of America poll have been associated with the "New Age" movement—a hard-to-define conglomeration of beliefs that has spawned a good deal of media attention, and which has been the topic of a considerable amount of concern within more traditional, mainline churches.

It is very hard to pinpoint what the New Age movement is. (One New Age author's attempt goes as follows: "It is the condition that emerges when I live life in a creative, empowering, compassionate manner. It manifests when I recognize and honor both the intrinsic wholeness of my world and the value and importance of everything within it.") But to many it is connected with public figures like Shirley MacLaine, and such psychic activities as channeling, crystal and pyramid power, and belief in reincarnation.

One New Age author's essay on channeling is titled "What Is Channeling and Why Is It So Popular?" and contends that there is "an extraordinary upswing in public interest in the phenomenon we now call channeling."

This upswing is not evident in our national Gallup data: Only 11 percent say they believe in channeling (defined as "participating in a trance during which a 'spirit-being' temporarily assumes control of your body"), and only 2 percent say they have ever participated in it.

Similarly small numbers have used a pyramid or rock crystal for their

Have you heard or read about the New Age movement?

	%
Yes	29
No	69
No opinion	2
	100

(The following three questions were asked only of those who had heard of the New Age movement, 386 respondents.)

Do you have a favorable or unfavorable opinion of it?

	%
Favorable	18
Unfavorable	49
No opinion	33
	100

Do you think the New Age movement is good for traditional religions, a threat to traditional religions, or does it not affect traditional religions either way?

	%
Good for traditional religions	7
A threat to traditional religion	35
Not affect traditional religions either way	36
No opinion	22
	100

Do you think the New Age movement is good for United States society, a threat to society, or does it not affect society either way?

	%
Good for society	13
A threat to society	34
Not affect society either way	33
No opinion	20
	100

purported healing powers (1 percent and 3 percent, respectively).

In fact, only about three of ten (29 percent) Americans say they have heard of the New Age movement, and for those who have, their view is decidedly more negative than positive. Forty-nine percent have an unfavorable view of the New Age movement, with only 18 percent professing a favorable view.

Unfavorable opinions may reflect the concern being expressed by many church leaders and theologians. Unfavorable opinions are particularly strong among Protestants, evangelicals, and those who attend church regularly. In fact, about one-third of those who have heard of the New Age movement feel that it is a threat to traditional religions, a sentiment that jumps to 50 percent among "born-again" Christians and is in general higher among the more religious Protestants.

Methodology

The results are based on telephone interviews with a randomly selected national sample of 1,236 adults, 18 and older, conducted June 14-17, 1990. For results based on a sampling of this size, one can say with 95 percent confidence that the error attributable to sample and other random effects could be plus or minus 3 percentage points.

In addition to sampling error, question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of public opinion polls.

George H. Gallup, Jr., is co-chairman of the Gallup Organization, Frank Newport is editor-in-chief of the Gallup Poll. The Gallup Poll is conducted by the Gallup Organization, Inc., P.O. Box 310, Princeton, NJ 08542.

Science and Self-Government

GERARD PIEL

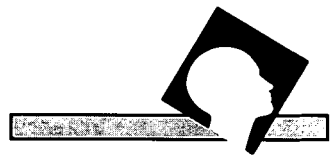
Gerard Piel is Chairman Emeritus of the Scientific American. *This was his keynote address at the 1990 CSICOP conference in Washington, D.C., where he received CSICOP's In Praise of Reason Award.*

I welcome this occasion to declare my admiration and thanks for what CSICOP has done over these many years in the front lines of environmental protection. Your work in the depollution of public discourse makes it possible to hope that our citizenry can get on with the task of self-government.

It strikes me often that yours must be a thankless enterprise. Most of the time, you are talking to people who are there to assert their First Amendment right to be nuts. You must feel, at times, like Brer Rabbit in his engagement with the tarbaby.

That was the experience, certainly, of Edward U. Condon, when he undertook to set the public straight on unidentified flying objects. Having been labeled "the weakest link in our atomic security" by the House Un-American Activities Committee and having surmounted that slur without any help from Washington officialdom, Ed took on the public service of trying to prove a negative: of persuading the public that the U.S. Air Force was not concealing secrets about UFOs. There followed the most trying years of his life, even worse than his experience with HUAC. His staff had been penetrated by UFO nuts. Upon publication of the Condon Report, they spent the next half-decade confounding public appreciation of the conclusive evidence laid out in that report. Like the marvelous apparitions that so enchant them, these people turn up everywhere.

Your invitation gives me an occasion, further,



Science and math education prepares and liberates people for citizenship. Reforms like those after Sputnik are again necessary, and university scientists must once more lead the way.

to declare my pride and pleasure in my long association with Martin Gardner and my complicity with him in the blows he struck for the cause of reason in the pages of *Scientific American*—for example, in his unremitting put-on of Targ and Puthoff.

It is wise of CSICOP to hold its 1990 conference in Washington, D.C. An administration that had a White House house-astrologer has just gone out of office. For all we know, the Pentagon continues its top-secret research into the paranormal, with special emphasis on clairvoyance or, as they call it over there, "remote seeing." And we know all too well that billions continue to be laid out on the ga-ga notions that inspire the dangerously destabilizing Star Wars project.

Perhaps holding this meeting here will remind the new occupant of the White House that he promised to be the Education President. This is a good time to press the urgency of doing something about the fact that some large number of our fellow citizens are unable to tell the difference between sense and nonsense. The campaign promise to improve education was qualified by the candidate's tender concern for our tax burden. This gathering should tell him we are ready to put our money where his lips are—ready to pay taxes for sound public education. He should know, moreover, that we are ready to give our time as well as our money to doing something about the fact that so many of our fellow citizens cannot distinguish fact from fantasy. Our self-governing democracy must count a smaller number of such citizens in its next electorate.

That brings us to the deplorable state of the teaching of science in our schools. In plain language: our schools are not teaching science. A recent survey shows that 40 minutes is given each day to arithmetic (not mathematics), 95 minutes to reading and writing, and 20 minutes to science and social studies. Whatever the time given to science in those 20 minutes, its teacher almost invariably learned to hate the subject before she or he got past the third grade and is now putting the children through the same experience. Teachers taught that way cannot teach science. They teach revelation. For the children, the science they are taught has no more grounding in reality than the other things they are told about the world with the same awesome authority by their teacher, their parents, and almost every other adult.

From our high schools one-third of the students graduate with only one year of what is called mathematics; only one-third graduate with three years of "math." More than half graduate with only one year of science; less than one-third have three years of science. Less than 20 percent of our high schools teach physics; a very much smaller percentage of our students are learning *any* physics.

We need to recall that moment back in 1957 when Sputnik was taunting us with its signals from high overhead. President Eisenhower came on the networks to tell his fellow citizens that over there, where Sputnik came from, the children were getting seven years of physics and ten years of mathematics along with six years of biology and six years of chemistry. Today, we know that the same is true for Japan and, in fact, for every other industrial country. What is more, the children in those countries go to school for as many as 240 six- to eight-hour days in a year. That compares with the standard 180 five-hour days exacted of children in our country. Arithmetic shows that the children of other industrial countries are getting twice as much education as ours.

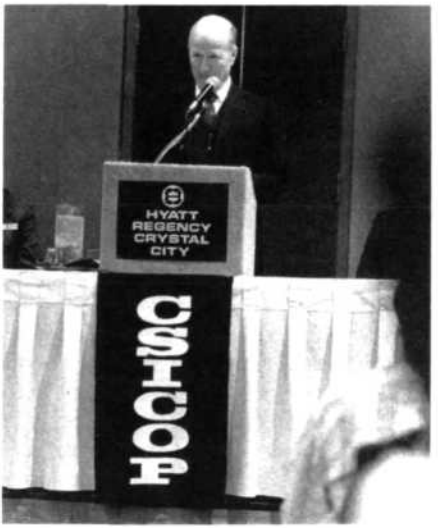
President Eisenhower persuaded

Congress to pass the National Defense Education Act and got the first substantial federal dollars spent in our jealously local school systems. To rouse a corresponding sense of crisis about education today, of course, we would have to pass a National Competitive Education Act, directed at an entirely different nation. The Japanese, who are worried about the mismanagement of our economy, would be glad to help, I am sure.

On the other hand, defenders of our American educational system make a pretty good case for it. Our libertarian and egalitarian schools produce students who, at graduation from college, are abreast of the graduates from the elitist, disciplinarian systems of the Old World. By not attempting to separate sheep from goats in the secondary schools, as they do in those other systems, American schools rescue for higher learning many students who would otherwise be lost.

In the Eisenhower revelations about the teaching of science and mathematics in the Soviet Union, I suggest that there is nonetheless a model for our educators to consider. Those six to ten years of exposure to each subject do not press full courses upon the students in each year. The students simply learn a little about the marvelous diversity of nature each day. That commends itself as a more natural way for children to learn physics, for example, than to encounter physics as a six-foot brick wall that must be jumped on the first try and with only one chance to do it in the course of an education.

The stretched-out learning gives the tiniest students the chance to learn physics, first of all, kinesthetically. Physics, after all, deals with natural forces, and our first experience of those forces is muscular. Children should start to learn physics from



Gerard Piel delivers the keynote address at CSICOP's 1990 annual conference. (Randy Bancroft/Rocky Mountain Skeptics)

contact with physical reality. From experience they learn to abstract physical principles and then go on to manage those concepts mathematically. My not very well hidden message is that science cannot be taught or learned from books. It takes practice. That means experience in the laboratory and the field.

That way of teaching and learning comports better with the role that I feel science and mathematics can and should play in the education of children for citizenship—in the liberal education of everyone, not just future scientists and engineers. What is wanted in a self-governing society is self-governing citizens. The truly sovereign citizen, by definition, can yield to no authority but his or her own judgment. To arrive at that autonomy, students must learn to find their way, as early in their education as possible, to the ground of knowledge. As I said, it takes practice. Students must learn how we know what we know before they can really learn anything else.

The way to the ground of knowledge goes straighter in the sciences than in other fields of learning. In the humanities and the social sciences, the less objective evidence presents ambiguities that require long experience and mature judgment for their resolution. Since children are natural scientists they can start, at the very beginning of their educations, to acquire the autonomy of knowing how we know. In the field and laboratory, they learn to surrender deeply held convictions to the test of evidence, to think past the naive physics with which we all grow up, to survive the ambush that Murphy's Law sets for the most carefully contrived experiment. The student learns what was said best by Gunnar Myrdal—and he was a social scientist—"Facts kick!" Citizens who have learned that lesson early enough will trust no one's judgment but their own.

The one year that is all the science that half of our students get in high school falls far short of supplying that experience. Science in our schools is taught, as I have said, as revelation, from books, and only with luck is this ever accompanied by experience in the lab or in the field. In the elementary schools, teachers typically have no preparation in science and no grasp of mathematics. In the high schools more than half the science teachers have only temporary certificates.

The qualified teachers, the ones who got reasonable education in the sciences 30 and 20 years ago, when the Physical Science Study Committee led the reform of the American high school science curriculum, are now retiring from the schools. What remains is a Gideon's army of discouraged, if still resolute, professionals. Those teachers had their careers rescued from earlier burnout by the first federal dollars for elementary and secondary education.

The deplorable state of the teaching of science and mathematics in our schools must be recognized as a symptom of the low priority now accorded to the entire enterprise of education in our country. Money, in our conspicuous-consumption culture, is the measure of status. When the American people were resettling in the suburbs at the end of World War II and building new schools in the open meadows, the compensation of teachers recovered somewhat from the low level to which it had fallen before the war. In the years since, penury in the public sector has taken them back to where they started.

Our schools today cost the country something on the order of $150 billion a year. That sounds like a lot in the Senator Dirksen sense: a billion here and a billion there and pretty soon you are talking real money. But almost all the money goes to salaries—including those of a great many bureaucratic supernumeraries as well as teachers—and to heating and lighting and repairing the roof. Not much more than a billion out of $150 billion goes to books and teaching materials.

The textbook publishers will tell you that they cannot make any contribution to curriculum development. They do business on thin margins. In California, they are confronted by competitive bidding, as if books were fungible, like cement. They would be the wrong people to go to for curriculum development anyway. They are much better known for their subservience to the prevailing low standards of instruction; for their willingness to rewrite history for acceptance in regional markets; for their readiness to give equal time to creationism where local custom and mythology demand it.

If something is to be done about the deplorable state of the teaching of science and mathematics it will have

to be done, as it was done before, by the scientific community, more specifically, by the university professors in that community. Before Sputnik raised the wind and got President Eisenhower on television, university professors had already got together on the problem with high school teachers at MIT, organized as the Physical Science Study Committee. The names of Jerrold Zacharias, Francis Friedman, and Philip Morrison should be celebrated by all their fellow citizens for what they did in those years. Their enterprise became the example after which university professors in every other field proceeded to reform, revise, and update the school curriculum materials.

This volunteer citizen initiative activated a dormant mandate from the U.S. Congress to the National Science Foundation that made it responsible for science education. Quite outside and on top of the money from the National Defense Education Act, NSF proceeded to fund the curriculum reform committees of the professoriate.

The physicists produced not merely a textbook but a full battery of supporting materials. Their library of demonstration films is still the best there is to bring physics vividly to the interest and understanding of adolescents. Their experimental kits for the laboratory have no black boxes; they expose the beauty of physics bare.

The biologists wrote three textbooks. One of them brought the new molecular biology into the high school. The chemists wrote two, and one of them brought the electron into high school chemistry.

From the university mathematicians came, of course, the new math. The controversy that followed ought to have established the importance of mathematics as a subject for teaching in the earliest school years. What they attempted was to give arithmetic the dignity of mathematics by exposing the axioms that underlie the familiar algorithms. Such, for example, is the one-to-one correspondence grasped by each of us in our earliest preliterate, kinesthetic experience. The idea was to excite students with the realization that mathematics is an ongoing, experimental enterprise that has by no means closed its books.

"Science cannot be taught or learned from books. It takes practice. That means experience in the laboratory and the field."

Some children, including a significant number of girls, one of them my own daughter, loved the new math and went on into mathematics and science. More children, on the other hand, flunked the standard sacred tests of computational skill. Testing is the bane of our educational system; the dead hand it laid on the new math it lays on all creative enterprise in teaching. The intervention of the university professors, in this case, only went to affirm the third R as basic, to the exclusion of mathematics. Now, with the electonic calculator to get arithmetic out of the way, mathematics may soon again return to our schools.

Within half a decade of the publication of the Physical Science Study Committee curriculum, the universities had to redo their freshman courses. Each of the reform efforts in the other disciplines had the same consequential effect. Within a decade, the teaching of science in the schools of our country had caught up with the interest that is excited in the students by the changing world they live in.

Over the decade that it ran, this

remarkable enterprise cost the taxpayer about $1 billion, an average expenditure of $100 million a year. Most of the $1 billion went to finance "summer institutes" on university and college campuses all across the country. The teachers went there to learn the new curricula. More important, the experience reawakened their own interest in the subjects they were teaching. The cost of the curriculum reform projects that occasioned this expenditure came, surely, to less than $100 million over the decade.

The bleakest spirit over there in the Office of Management and Budget ought to be excited by the idea of leveraging the $150 billion we spend on elementary and secondary education with the expenditure of a mere $100 million. In the name of the new Federalism, he could dump the cost of the summer institutes on the states and on the school districts. That would leave a mere $10 million to be spent on the curriculum materials. Now the leverage goes up to 15,000 to one. If the bleak spirit harbors a faint glow of humanity, he will be excited to think that a mere $10 million can make it worthwhile for our children to spend the 40 billion child hours in school that they are required to spend each year.

It is a cinch to sell this program. All that is necessary is the surge of initiative from our university science professoriate on the model of the Physical Science Study Committee. This time, you will not think that you can solve the problem of science teaching once and for all with a single push. You will make the commitment a permanent one, integral and natural to your profession and your citizenship. By taking the leadership in exciting this initiative, CSICOP can undertake the necessary preventive action that goes along with its demonstrated, valuable curative activities in the cause of reason.

The decline of the teaching of science in our schools manifests itself on all sides in our popular culture and in the way our body politic conducts the business of our society. It can be seen in the pollution of the media of communication that CSICOP contends with every day. It can be seen in the power of the single-cause pressure groups that substitute feeling for thinking in the shaping of public policy. The political record of the past four decades shows that the American people share no common body of knowledge or understanding on which to form consensus on such urgent topics as energy, the protection of the environment, and disarmament. Most people are daunted by the physical world and suffer an associated incapacity to make quantitative connections, distinctions, and judgments. Too many Americans find themselves coping with life in the man-made world of today in much the same ignorance and superstition as their forerunners in the pristine world of nature.

The next generation must be better prepared for self-government. The citizen must have autonomous intelligence, ready to seek and face the truth, immune to wishful thinking and to external authority. That is the liberating objective of the teaching of mathematics and science in our schools. ■

The West Bank Collective Hysteria Episode

The Politics of Illness

JAMES R. STEWART

Episodes of mass hysteria have captivated researchers for years, but have thus far eluded the efforts of social scientists to provide a comprehensive, systematic explanation of the causes and processes involved. Mass hysteria typically involves the "contagious" spread of physical symptoms (such as fainting, convulsions, nausea, dizziness, and headaches) along with the adoption of a belief system that attributes causation to a toxic agent (such as insects or gases). Although the victims are firmly convinced their illness is "real," extensive medical and environmental studies fail to identify a chemical or biological cause for the symptoms. With no evidence to support the "real illness" explanation, the authorities typically label the episode as an example of mass hysteria and the whole thing is quietly forgotten. The mass-hysteria explanation, however, is usually met with opposition from members of the afflicted group, who remain convinced of the legitimacy of their illness.

People may take part in episodes of mass hysteria not out of fear but because they gain rewards, and it can be fun.

Investigations of these outbreaks commonly proceed from an assumption that an accumulation of stress from various sources acts as the underlying cause of the episodes. The stress builds and eventually causes one person to "snap" under the pressure and exhibit an idiosyncratic form of behavior (i.e., symptoms of physical illness). This behavior then spreads throughout the immediately affected group, most commonly occurring in schools or workplaces. The behavior is believed to represent a

form of release or escape from unpleasant situations and, as such, most closely resembles an episode of panic in the literature of collective behavior (Smelser 1962; Kerckhoff and Black 1968; Klapp 1972; and Rose 1982).

Other social scientists, however, have suggested a competing model of explanation. Instead of focusing upon the fear and anxiety victims are supposedly escaping from in a "panicky" fashion, they look at the possible rewards the participants receive. Rather than viewing participants as involved in an escape/panic, they perceive the victims to be participating in an illness craze in an effort to glean rewards (Schuler and Parenton 1943; McGrath 1982; and Gehlen 1977). This depiction of mass hysteria as a craze seems to be the more compelling of the two models and was used to analyze the following episode.

On March 21, 1983, scores of schoolgirls in the village of Arrabah on the Israeli-occupied West Bank were stricken with a mysterious illness. The symptoms included nausea, headache, dizziness, and fainting spells. The first girl stricken was sent home. Within the next few hours dozens of other girls were similarly afflicted. The local public-health officer was called after the initial cases were reported to the school administrators, but was unable to locate the cause of the illnesses. The health official's investigation seemed to precipitate an alarming increase in the number of cases, and the school was forced to close later that morning (Landrigan and Miller 1983:17).

Public-health officials returned to the scene in the evening and noted an unusual odor of gas. Although the source of the gas could not be pinpointed, it was generally concluded that it emanated from an open latrine pit located nearby. Only a very few cases were reported during the next 72 hours and the situation calmed down.

During this episode more than 60 girls were hospitalized with severe symptoms. Those with milder cases were treated by local physicians. Medical personnel conducted a barrage of screening tests on the hospitalized victims, but they were unable to offer conclusive results regarding a cause of the complaints. Public-health personnel conducted a comprehensive investigation of the environment in and around the school. These studies also yielded negative results. The incident was reported by the local media and accusations were made against both the occupying Israeli Defense Forces and recent Israeli settlers, who were accused of using poisons to terrorize the local Arab population. The Israelis vehemently denied the charges and, in turn, suggested that local Arabs were attempting to politicize what was actually an episode of mass hysteria. Their conclusions were based upon studies of similar episodes reported and researched in the United Kingdom and the United States. Since neither side was able to offer enough convincing evidence to support their respective cases, an uneasy stalemate developed as the situation quieted down during the next few days.

The prevailing calm was short-lived. A new outbreak flared up very quickly when 300 schoolgirls were stricken in the neighboring community of Jenin on March 26, 1983. The outbreak was similar to the preceding episode in the patterned symptoms of the victims, but it was significantly larger and involved more of a cross-section of the local population. Almost 400 persons were reported to have developed symptoms (Landrigan and Miller 1983:19-20). The vast majority were again schoolgirls; but a significant number of adult females also

developed symptoms, and some of the adult males who helped transport the afflicted children to hospitals as well as four soldiers of the Israeli Defense Forces also came down with symptoms. Local hospitals were inundated. Many patients had to be transferred to hospitals in surrounding communities.

Once again medical personnel from the local community and area public-health officials conducted tests. The results again failed to discover an organic or environmental cause of the illness. By this time the episode was receiving worldwide news coverage, including accusations by the Palestinian Liberation Organization that "schools had been sprayed with a poisonous gas" by the Israelis (*New York Times*, March 29, 1983). The United Nations called for an investigation. The World Health Organization and the International Committee of the Red Cross sent teams of medical personnel to the area to conduct independent investigations. The Israeli Ministry of Health requested that a medical team from the Centers for Disease Control in Atlanta, Georgia, be dispatched to the West Bank to conduct an investigation (Landrigan and Miller 1983:2).

During this time the episode was marred by violence. Angry mobs of Arab demonstrators protested the "poisonings." During one confrontation, Arab teenagers were injured by gunfire from frightened Israeli settlers (Shipler 1983). There were also isolated incidents of vigilanteism on both sides as tensions escalated. This second outbreak ended abruptly on March 28. No new hospital admissions were reported during the next week.

The third and final wave of illnesses occurred April 3. Two different areas were simultaneously struck. One was a neighboring community to the site of the first two outbreaks; the other was located one hundred miles away in the extreme southern part of the West Bank area. More than 500 persons were involved in this phase of the episode. The pattern was similar to that of the first two waves. In each of these stricken areas the illness started among girls in a school and then spilled over into the surrounding community, and each incident appears to have been triggered by children smelling odors that they described as "sulfurlike" or "gaslike" (Landrigan and Miller 1983:21). Many of the victims were hospitalized and, like the participants in the preceding episodes, released in a few days. A few isolated reports followed during the next two weeks, but these involved single individuals and did not spread to others.

The final tally indicated that almost a thousand persons had been involved in this series of incidents. Most were hospitalized, although only briefly. There were no fatalities and no reported lingering effects.

Similar occurrences of "mass hysteria" have been frequently reported in medical and social-science journals. These, however, were generally much smaller in size than the West Bank outbreaks. This episode captured the journalistic fancy of the world news media, which featured stories of the illness on an almost daily basis. Never before had an outbreak of mass hysteria been so widely covered or so heavily politicized. Speculation abounded regarding the cause of the mass illness and seemed to reflect more political than medical considerations. Those supporting the "poison gas" explanation thought that either Israeli soldiers or recent Israeli settlers in the West Bank area were terrorizing the local Arab population with poison gas. Schools were considered to be favorite targets because of their

high concentration of population and the vulnerability of schoolchildren. On the other side were the advocates of a "mass hysteria" explanation. These persons attributed the illnesses to a pre-existing emotionally charged situation (Israeli-Arab hostilities) in which some gullible schoolgirls had succumbed to an environmental triggering stimulus (sewer gas), and the resulting spread of symptoms was a textbook example of mass psychogenic illness.

Persons who subscribed to the poison-gas interpretation included local Arab public-health officials (who maintained the illness was real), the Palestinian Liberation Organization and their spokesman, Yasser Arafat (who labeled it a planned and systematic crime against Arabs), Radio Moscow (which issued a statement condemning the Israelis for their use of gas), and most third world delegates to the World Health Organization (who voted to condemn Israel for glossing over and rejecting the poison-gas theory in favor of the mass-hysteria explanation). Other fervent supporters included local "radical" PLO supporters who were purported to have encouraged the episode by hanging around the schools and hospitals (*New York Times*, May 21, 1983).

Proponents of the mass-hysteria explanation included Israeli public-health officials and a team of two physicians from the Centers for Disease Control in Atlanta (Landrigan and Miller 1983). Unlike previous documented examples of this phenomenon, the West Bank episode involved relatively large numbers and a geographically dispersed population. Yet these differences could not detract from sound medical and scientific evidence that clearly supported a psychogenic explanation. Landrigan and Miller (1983:1) concluded:

> . . . This epidemic of acute illness was induced by anxiety. It may have been triggered initially either by psychological factors or by subtoxic exposure to hydrogen sulfide. Its subsequent spread was mediated by psychogenic factors. Newspapers and radio reports may have contributed to this spread.

Drawing from its extensive investigation, the CDC team cited a number of findings strongly supporting the mass-hysteria explanation. First and foremost were the findings from comprehensive laboratory studies, which produced no evidence of the existence of any toxic agents in the air, soil, or water of the stricken areas. Tests conducted on blood and urine samples of the hospitalized patients similarly produced no evidence of toxic etiology. Second, the great majority of the victims were adolescent girls, a group previous investigations had demonstrated to be the most vulnerable to these outbreaks. Finally, the form and duration of the clinical symptoms were consistent with previous mass-hysteria findings. The episodes typically began slowly, flared-up quickly, and terminated after a few days. Although the symptoms were suggestive of a severe illness, all of the patients recovered quickly and suffered no physical after-effects (Landrigan and Miller 1983:26-28).

In a limited, parallel investigation, a team dispatched from the World Health Organization reached similar although watered-down conclusions (WHO, 1983). Its support for a "mass hysteria" explanation was largely implicit and based upon the inability of their findings to indicate any specific toxic cause or set of causes. The WHO report does, however, make mention of the tension and anxiety under which the people of the occupied territories lived and the

compoundingly stressful developmental period of adolescence in females. Both of these observations support a mass-hysteria explanation even though the WHO report doesn't come right out and say so.

The International Committee of the Red Cross also sent an investigator to the area and, based upon his findings, called for a full-fledged investigation to be performed by a competent body (ICRC, 1983). They reached no conclusions about the cause of the episode and have refused to release the findings of their investigations, citing the need for confidentiality in their inquiries.

Landrigan and Miller (1983:29-30) offered a concluding explanation:

> 1. The initial outbreak at Arrabah appears to have been triggered either by psychological factors or possibly by the smell of escaping H_2S from an outdoor latrine. Although the concentrations of H_2S at the school in Arrabah are not at all likely to have reached toxic levels, there may have been sufficient concentration of gas following flooding of the latrine during heavy rains in Spring, 1983 to have produced a foul odor and consequent upper respiratory irritation in a few students. Previous studies of outbreaks of psychogenic illness have emphasized that a perception of strange odors or gases by affected individuals have frequently preceded onset of illness (Colligan and Murphy, 1979).
>
> 2. The subsequent spread of the outbreak was due to psychogenic factors. That spread may have been facilitated by newspaper and radio reports which described the symptoms in detail and strongly suggested that a toxic gas was the cause of the outbreaks.
>
> 3. The termination of the outbreak was probably related to the closing of West Bank schools. The closing of the schools dispersed the students and helped to minimize the opportunity for spread of symptoms among students clustered together in the classroom environment.

An analysis using the craze model rests upon identifying the valued goals or rewards that may have motivated the participants to adopt the sick role. For some it may have been a release or escape from a recently arisen avoidance dilemma. During the week immediately prior to the first flare-up, "radical Palestinian factors" had been active in encouraging schoolchildren to strike and join demonstrations commemorating Land Day (March 30 was the anniversary of the killing of six Arabs in anti-Israeli demonstrations in 1976). Masked men were reported to have visited several schools in the area and called for the students to skip classes and participate in the planned demonstrations. Officials found a pamphlet in one of the Jenin schools threatening the students and strongly urging them to go on strike (Shipler 1983). These forces of provocation may have caused an intensive avoidance situation for students who were caught between the untenable choice of cutting their classes and joining the strike or being labeled as pro-Israel. The sick-role behavior would have provided a welcome and legitimate way out. One could actually participate in a pseudo-strike (mass hysteria) without fear of being held accountable by either parents or authorities. Nor would the students have to fear being stigmatized as pro-Israel.

Another reward was notoriety. Most of the stricken persons were taken to hospitals for treatment. While in the hospitals, the patients were given special care. Some were treated like celebrities. They received the best available care by local medical personnel and were accorded a special

status unavailable to patients with mundane conditions. They were viewed as the innocent victims of heinous chemical warfare perpetrated by the Israeli settlers (*Newsweek*, April 18, 1983).

The schoolgirls also found themselves at the center of attention from the representatives of the World Health Organization, the International Red Cross, and the U.S. Centers for Disease Control. These teams questioned large numbers of the afflicted girls in their attempts to establish an etiology of the illness. In addition, the world media showered them with attention. There was even one instance in which a CBS news team was arrested by Israeli authorities for encouraging "hospitalized school girls to act ill for the camera" (*New York Times*, April 5, 1983).

American television networks carried extensive stories on the hospitalized victims, highlighted by examples of schoolgirls acting in a frenzied, convulsive manner, almost on cue, everytime the cameras panned in their direction. The hospitalized schoolgirls depicted on television also gave the 'V' for victory sign for the benefit of cameras at what appeared to have all of the earmarks of a fun-filled hospital slumber party. They exhibited a nonchalant concern over their illness. Given the seriousness of the symptoms, the patients' responses seemed totally inappropriate. Their attitude could best be described as *la belle indifference*—a lack of concern that psychiatrists have noted in individual cases of conversion hysteria. There were also reports from Israeli sources claiming that some of the girls had admitted faking their symptoms (*Time*, April 18, 1983).

I have noted a somewhat similar attitude characterizing "believers" in episodes of cattle mutilations and Bigfoot sightings. While conducting field research and interviews, I was struck by the enthusiasm with which people adopted an explanation fraught with terror and fright. If people truly believed that extraterrestrials or satanic cults were killing and mutilating cattle or that big, hairy monsters were making mysterious footprints in their areas, they should have been exhibiting fear or at least high levels of anxiety. Instead they seemed to be enthusiastically embracing the most fearsome and gory versions of the monster explanations. Rather than being motivated by panic; they seemed to show great eagerness to participate in these collective delusions. In fact, interviewees willingly performed mental gymnastics to believe the bizarre explanation instead of the more empirically supportable, scientific account of the cause of dead cattle or mysterious, enlarged footprints.

Another way the participants can gain from assuming the sick role is that it gives them the power to manipulate persons in positions of authority. Previous studies of mass hysteria have shown that victims have higher rates of absenteeism or poorer relationships with their supervisors than control-group members (Colligan and Murphy 1982:43-45). Those who fall victim may have found a way to embarrass or retaliate against immediate authorities. Surveys administered by the CDC team showed no significant differences between the affected and nonaffected schoolgirls with respect to grades, previous use of sick days, or relationships with their teachers. However, these were self-administered questionnaires and the research team had no independent measures to check the respondents' veracity. As a result, no evidence can be presented that the victims used the illness as a weapon against school authorities, but participation in the hysteria episode cer-

tainly brought embarrassment to the occupying Israeli soldiers and settlers. There is no need to present a detailed history of Israeli-Arab hostilities in the West Bank; it is obviously one of the most politically sensitive areas in the world today. Tension has been extremely high since the Israeli occupation after the Six-Day War in 1967. Establishment of Israeli settlements in the area during the past two decades have greatly exacerbated an emotionally charged situation that was already at the breaking point. Israelis were accused of using both poisonous gas and a mysterious yellow powder (later identified as pollen) to scare the Palestinians from their rightful homeland in the West Bank. Newspaper headlines and lead stories on radio and television readily reported the accusation of mass poisoning. And as is often the case in episodes of hysteria and delusions, the media tended to share the sensational aspects of the story and give less coverage to the medical refutations of the original accounts.

Smelser (1962:175-188) has identified four positive goals or media of exchange that motivate people to participate in crazes. They are money/property, power, prestige, and psychic gratification. There is no evidence that any of the West Bank victims realized monetary gains from being stricken with the illness, but there is a strong case that they did enjoy gains in the other three dimensions.

The power to manipulate others could have been beneficial to the stricken patients. A two- or three-day medical vacation from school and family responsibilities with no fear of retribution, along with the pampered care received while in the hospital, may have been a powerful inducement for developing symptoms. The acquisition of power was also evidenced by the ability of stricken patients to embarrass, humiliate, and punish the occupying Israelis in front of the whole world. The illness provided vivid "proof" of the heinous nature of the Israelis, who were pictured as having used poisoned gas against helpless schoolchildren. The opportunity of powerless persons suddenly finding themselves in a position with enough political clout to hurt their "enemies" could have been a powerful motivator. The advantageous position that victims find themselves in illustrates why mass psychogenic illness is considered to be a political as well as a behavioral phenomenon (Colligan and Murphy 1982).

The temporary fame enjoyed by the victims also may have served as a method of gaining prestige among peers and the larger community. The illness could have provided instant notoriety and a method of becoming the center of attention. Phoon (1982:31) has drawn similar conclusions in a study of outbreaks of occupational mass hysteria. Victims, far from being ridiculed or condemned, often receive expressions of concern and sympathy from parents, workmates, and even management. Finally, the pleasantness associated with the carnival atmosphere surrounding the episode could have encouraged others to join those already sick. The "fun" associated with spending a few days in a hospital ward with friends would have been a psychologically gratifying experience. It would have been a way of establishing in-group ties among the afflicted and creating a cohesive "we" feeling. It has been suggested that participation in episodes of mass hysteria is a rewarding experience (Stahl 1982). The victims share their experiences by displaying the "stereotyped" symptoms and make the behavior a collective rather than individual experience. The actors mutually reinforce one another.

It's time that social scientists take a hard look at the underlying assumptions upon which previous investigations of mass hysteria were based—that of unwitting victims being involuntarily stricken by psychophysiological symptoms because of stressful environments. Rather than escaping, the victims may be drawn to the possibility of getting a couple of days off from work or school without fear of reprisals. Rather than suffering, victims may actually be enjoying the illness. Rather than being repulsed by some stress stimulus, victims may be attracted to the benefits and rewards of becoming ill. Contracting the disease may represent a form of collective wish-fulfillment and, as such, should be analyzed from the perspective of a craze.

References

Colligan, Michael J., and Lawrence Murphy. 1982. A review of mass psychogenic illness in work settings. In *Mass Psychogenic Illness*, ed. by Michael J. Colligan, James W. Pennebaker, and Lawrence Murphy. Hillsdale, N.J.: Lawrence Erlbaum.

———. 1979. Mass psychogenic illness in organizations: An overview. *Journal of Occupational Psychology*, 52:77-90.

Colligan, Michael J., James W. Pennebaker, and Lawrence Murphy. 1982. *Mass Psychogenic Illness: A Social Psychological Analysis*. Hillsdale, N.J.: Lawrence Erlbaum.

Gehlen, Frienda L. 1977. Toward a revised theory of hysterical contagion. *Journal of Health and Social Behavior*, 18:27-35.

ICRC (International Committee of the Red Cross). 1983. Israel and occupied West Bank: An ICRC recommendation. ICRC press release, April 7.

Kerckhoff, Alan C., and Kurt Black. 1968. *The June Bug*. New York: Appleton-Century-Crofts.

Klapp, Orrin E. 1972. *Currents of Unrest: An Introduction to Collective Behavior*. New York: Holt, Rinehart and Winston.

Landrigan, Philip J., and Bess Miller. 1983. Epidemic acute illness—West Bank." Report to the Centers for Disease Control, April 20.

McGrath, Joseph E. 1982. Complexities, cautions, and concepts in research on mass psychogenic illness. In *Mass Psychogenic Illness*, ed. by Michael J. Colligan, James W. Pennebaker, and Lawrence R. Murphy. Hillsdale, N.J.: Lawrence Erlbaum.

Newsweek. 1983. A "poison" scare on the West Bank. April 18:42.

New York Times. 1983. Israel finds no poison at 6 Arab schools, March 29; U.N. calls for investigation, April 5; World health agency condemns Israel over West Bank epidemic, May 13; Israelis dismiss Arab official in West Bank illness dispute, May 21; Editors' notes, May 21.

Phoon, W. P. 1982. Outbreaks of mass hysteria at workplaces in Singapore: Some patterns and modes of presentation. In *Mass Psychogenic Illness*, ed. by Michael J. Colligan, James W. Pennebaker, and Lawrence Murphy. Hillsdale: N.J.: Lawrence Erlbaum.

Rose, Jerry D. 1982. *Outbreaks: The Sociology of Collective Behavior*. New York: Free Press.

Ross, E. A. 1908. *Social Psychology*. New York: Macmillan.

Schuler, Edgar, and Vernon J. Parenton. 1943. A recent epidemic of hysteria in a Louisiana high school. *Journal of Social Psychology*, 17:221-235.

Shipler, David K. 1983. Hundreds fall sick in West Bank; poison suspected. *New York Times*, March 28.

Smelser, Neil J. 1962. *Theory of Collective Behavior*. New York: Free Press.

Stahl, Sidney M. 1982. Illness as an emergent norm or doing what comes naturally. In *Mass Psychogenic Illness*, ed. by Michael J. Colligan, James W. Pennebaker, and Lawrence Murphy. Hillsdale, N.J.: Lawrence Erlbaum.

Time. 1983. Ailing schoolgirls. April 18:52.

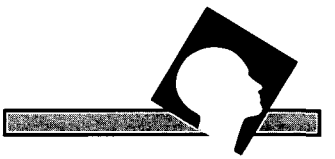
WHO (World Health Organization). 1983. Health conditions of the Arab population in the occupied Arab territories, including Palestine. Report to the Director General, May 11.

James R. Stewart is with the Department of Social Behavior, University of South Dakota, Vermillion, SD 57069.

Acceptance of Personality Test Results

PHILIPPE THIRIART

Abstract: Is the accuracy of the result of a personality test an important factor in its acceptance by a psychologist's client? In the present experiment, the acceptance of scores in the "Survey of Interpersonal Values" by L. V. Gordon has only a slight correlation with their scientific accuracy (phi = 0.14). Furthermore, acceptance is more closely related to high scores (phi = 0.38). These findings indicate that people are more willing to accept socially desirable statements about themselves than those that are scientifically accurate. The findings also suggest why many people easily accept statements about their personality that come from astrologers and palm readers.



People are more willing to accept socially desirable statements about themselves than those that are scientifically accurate.

Professionals often evaluate the effectiveness of their actions based on the satisfaction expressed by their clients. However, is a professional in psychology able to rely on the client's satisfaction as a means of validating statements he or she makes about the client's personality?

A considerable number of experiments have been conducted in the past concerning what has been called the "P. T. Barnum Effect" (Snyder and Shenkel 1975; Thiriart and Legault 1982; Baillargeon and Danis 1984; Sunerton and Fichten 1984). These experiments consist in having subjects believe that there will be detailed analyses of their personalities (using a personality inventory test or an astrological reading). They are then presented with statements that are true for most people, such as: "You see yourself as being an independent thinker and as not accepting the opinions of others without

adequate proof." "You possess a number of personal resources that you have not used to your advantage." "Deep down, you are more sensitive than you usually let on."

When statements of this nature are made, a subject typically reacts by considering them to be very true about himself or herself, but only moderately true of people in general. The subject tends to believe that these statements reveal important aspects of his or her own uniqueness. The experiment works even when those conducting the experiment are junior college students, so long as they behave in a confident manner.

A second type of experiment involves asking subjects to select their personality profile from a number of other personality profiles. Roger L. Greene and his colleagues (1979) conducted an experiment using H. G. Gough's California Personality Inventory. The categories used in the results of this test are close to those of daily experience: sociability, self-acceptance, sense of well-being, responsibility, self-control, tolerance, and so on. In Greene's experiment, 68 students were presented with two personality profiles: one, their actual profile; the other, a profile created by inverting the more extreme traits of their actual profile. Random selection would have had about 34 students selecting their actual profile and the same number selecting the inverted profile. In fact, 48 subjects chose their own profile and 20 subjects chose the inverted profile. This corresponds to a correlation coefficient phi = 0.41 and a chi-square 11.53 (Guilford 1965: 334).

The correlation coefficient 0.41 can be interpreted as the upper limit of one's self-knowledge since this situation is the easiest for the subject. It is possible to render the task more difficult, although more natural, by presenting subjects with a number of profiles, one of which is their own and others selected at random rather than being inverted. This is what Shawn Carlson (1985) did using the California Personality Inventory (CPI).

Carlson wondered to what extent test subjects could recognize exact descriptions of themselves when included with descriptions of others. Subjects were to identify their CPI profile from a set of three. The 106 subjects, most of whom were adults, were able to identify their actual profile 43 percent of the time, that is, only 10 percentage points better than the 33 percent one would expect in a random selection. This rate corresponds to a correlation coefficient phi = 0.15 (Guilford 1965: 334). The subjects easily took descriptions of others as their own.

Our approach involves a third type of experiment. Psychologists and astrologers make statements about their clients' personalities, some of which are true and some false. We wanted to measure to what extent subjects are able to distinguish between true and faked results within the same personality profile. We used the Survey of Interpersonal Values developed by Leonard V. Gordon (1976).

Several other articles have been published on the general topic (Ruzzene and Noller 1986). Unfortunately, these articles do not usually give information that allows for measurement of the effects under observation. Statistics they use allow one to know only whether the results are significant or not (Thiriart 1983; Nelson, Rosenthal, and Rosnow 1986).

Our hypothesis predicts that there is only a slight correlation between the accuracy of a statement describing a personality and its acceptance by the subject. Subjects are barely able to differentiate between true scientific results and faked results. We will also

try to discover what other factors might influence acceptance of the results.

Methodology

The sample group is composed of 99 female college students and 33 male college students (N = 132) with an average age of 18.

The test employed is Gordon's Survey of Interpersonal Values. It measures the relative importance a person gives to the following six interpersonal values: (1) Conformity: doing what is socially correct, following regulations closely, doing what is accepted and proper, being a conformist. (2) Recognition: being looked up to and admired, being considered important, attracting favorable notice, achieving recognition. (3) Benevolence: doing things for other people, sharing with others, helping the unfortunate, being generous. (4) Independence: having the right to do whatever one wants to, being free to make one's own decisions, being able to do things in one's own way. (5) Leadership: being in charge of other people, having authority over others, being in a position of leadership or power. (6) Support: being treated with understanding, receiving encouragement from other people, being treated with kindness and consideration.

A low score in one of the value scales does not imply that the subject is pathological or deficient but that the subject is indifferent to the particular value in question. In fact, the test was selected because it is relatively innocuous.

The norm for each value is presented to the subject in the form of a percentile. The percentile indicates to the subject the importance he or she gives a value in relation to a standardized group of the same sex. The standardized groups are composed of 2,412 male students and 1,529 female students of college age and were tested across the United States.

When the tests are scored, two of the values are faked according to a specific procedure. Altogether each value is modified an approximately equal number of times (42 to 47 times). The scores are faked by adding or cutting 50 percent depending on whether the percentile was initially above or below the 50th percentile. For example, a subject who is in the 80th percentile in one of the values, might be told that he or she is in reality in the 30th percentile. In practice, the faking procedure inverts the weight of the score.

A month after taking the test, the scores (4 real and 2 fake) are returned to each subject. They are accompanied by a printed text explaining each of the interpersonal values listed above, as well as a verbal interpretation of each score. A percentile score from 1 to 19 represents a value that is very rarely of importance to the subject. A score between 20 and 39 is rarely important. A score between 40 and 59 is moderately important. Between 60 and 79, a value is often important. A score between 80 and 99 represents a value that is very often important to the subject.

Subjects are then asked for each value to mentally examine their behavior to see whether it is similar or dissimilar to their score and to express their agreement by selecting a number from 1 to 6. The subject writes "1" when in strong disagreement with the result; "2" when in disagreement; "3" when in partial disagreement; "4" when in partial agreement; "5" when in agreement; and "6" when in strong agreement. After giving their assessments, the subjects are given their true scores and told the purpose of the experiment.

Results

It is worth noting the average degree of acceptance of the 792 scores by the 132 subjects. (See Table 1.) The general average of acceptance is 4.07. Overall, subjects expressed partial agreement with their scores, but disagreed with a third of them.

TABLE 1

The relation between disagreement (1, 2, or 3) and agreement (4, 5, or 6), and true and faked scores.

	Disagree	Agree	Total
Faked	113	151	264
	43%	57%	100%
Actual	152	376	528
	29%	71%	100%
Total	265	527	792
	33%	67%	100%

What is the correlation that brings together the fact that a score may be faked or actual with agreement or disagreement of the subjects? Table 1 shows that subjects disagree with 43 percent of the faked scores and with 29 percent of the actual scores. A four-entry table allows for the calculation of a correlation coefficient of phi = 0.14. If the table had had 12 entries (2 × 6), we would have had a contingency correlation of 0.18 (Guilford 1965: 333-338). In both cases, the coefficient is very close to that reached by Carlson (phi = 0.15).

We then wondered whether there was a relation between high scores and the agreement expressed by the subjects. Table 2 shows how low scores (49th percentile and lower) fare compared with high scores (50th percentile and higher). Subjects disagreed with 52 percent of the low scores but with only 16 percent of high scores. The table corresponds to a correlation coefficient of phi = 0.38. (A 12-entry table yields C = 0.41.)

TABLE 2

The relation between subject disagreement (1, 2, and 3) and agreement (4, 5, and 6), and low and high scores.

	Disagree	Agree	Total
Low Score	198	184	382
	52%	48%	100%
High Score	67	343	410
	16%	84%	100%
Total	265	527	792

A multiple regression analysis was done for each of the six values and confirmed that agreement by the subjects was clearly more closely tied to high scores than to accuracy.

The correlation between high scores and agreement is particularly strong for the values of benevolence (Beta = 0.64), independence (Beta = 0.70), and support (Beta = 0.68). (These coefficients are significant to 0.001.) On the other hand, in the best case, that of benevolence, the relation between agreement and actual scores yields only a coefficient of Beta = 0.20.

Interpretation

Why do subjects distinguish so poorly between faked and actual scores? A possible interpretation is that the people with whom one compares oneself in order to gauge personality rarely constitute a representative sample of the population to which one belongs. As a result, each person's self-image coincides only partly with his or her position in the population. Consequently, subjects in this experiment do not have an assessment of themselves that is accurate enough to

know which score to reject. Thus, they reject a number of actual scores (29 percent) and only a minority of faked scores (43 percent).

Jacques-Philippe Leyens offers the basis for a second possible interpretation. He states: "Only certain personality traits are relevant to describe a particular individual and they vary from one person to another; it follows that only relevant traits are stable in each individual" (1983: 175). In addition, statements about a personality do not correspond to a working description but rather to a judgment. When it is said that a person is nervous, this is not a description of the person's behavior in standard situations, but rather an inferred judgment based on arbitrarily selected situations (Beauvois 1984). One need only think of a new situation to produce a different inference. Finally, the inference process itself may be marred by error (Nisbett and Ross 1980). In everyday life, we easily forget that the personality is not something real that we can observe and describe. Instead, it is an intellectual construct.

Why do subjects so easily accept high scores for certain values when their actual scores for these values are low? It seems to be a question of social desirability. For a student in the social sciences, it is socially desirable to think of wanting to act on one's own (independence), to benefit from the understanding and attention of others (support), and to wish good for others (benevolence). In a lighter vein, one might argue that psychologists, astrologers, and palm readers who wish to better satisfy their clients should tell them what they want to hear rather than the strict truth. In any case, to get along in life is it necessary to know oneself completely? Is it not, perhaps, more useful to project a socially desirable image both for others and for oneself?

References

Baillargeon, J., and C. Danis. 1984. Barnum meets the computer: A critical test. *Journal of Personal Assessment*, 48 (4):415-419.

Beauvois, J. L. 1984. *La psychologie quotidienne.* Paris: P.U.F.

Carlson, S. 1985. A double blind test of astrology. *Nature*, 318:419-425.

Gordon, L. V. 1976. *Survey of Interpersonal Values.* Chicago: Science Research Associates, Inc.

Guilford, J. P. 1965. *Fundamental Statistics in Psychology and Education.* New York: McGraw-Hill.

Greene, R. L., M. E. Harris, and R. S. Macon. 1979. Another look at personal validation. *Journal of Personality Assessment*, 43 (4):419-423.

Leyens, J. P. 1983. *Sommes-nous tous des psychologues?* Brussels: Pierre Mardaga.

Nelson, N., R. Rosenthal, and R. L. Rosnow. 1986. Interpretation of significance levels and effect sizes by psychological researchers. *American Psychologist*, 41 (11):1299-1301.

Nisbett, R., and L. Ross. 1980. *Human Inference: Strategies and Shortcomings of Social Judgment.* Englewood Cliffs: Prentice-Hall.

Ruzzene, M., and P. Noller. 1986. Feedback motivations and reactions to personality interpretations that differ in favorability and accuracy. *Journal of Personality and Social Psychology*, 51 (6): 1293-1299.

Snyder, C. R., and R. J. Shenkel. 1975. The P. T. Barnum effect. *Psychology Today*, March: 52-54.

Sunerton, B., and C. S. Fichten. 1984. Laboratory exercises for psychology courses: Scientific study of horoscopes. *Tirés à part*, 5:43-46.

Thiriart, P. 1983. Résultat significatif et télépathie. *Tirés à part*, 4:34-38.

Thiriart, P., and M. Legault. 1982. The P. T. Barnum effect ou les pièges du moi. *La petite revue de philosophie*, 4(1):157-172.

Philippe Thiriart teaches psychology at Collège Edouard-Montpetit, 945 Chemin de Chambly, Longueuil, Quebec, Canada, J4H 3M6. He is also the editor of Bulletin des Sceptiques du Québec. *The experiment discussed in this text was conducted in collaboration with François Berthiaume, professor of psychology at Collège Bois-de-Boulogne in Montreal.*

Belief in Astrology

A Test of the Barnum Effect

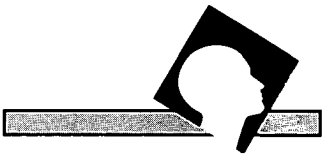
CHRISTOPHER C. FRENCH, MANDY FOWLER, KATY McCARTHY, and DEBBIE PEERS

There is no empirical support for the claims of traditional astrological theory (see Culver and Ianna 1988; Dean and Mather 1977; Eysenck and Nias 1982; Gauquelin 1979; Jerome 1977; Kelly 1979; Startup 1984). Despite this, the level of belief in astrology in the general population is high and shows no sign of declining. Most people who have their horoscopes cast perceive those horoscopes to be an accurate description of their personalities. Why should this be?

Several factors have been suggested as playing a role in forming and maintaining a belief in the validity of horoscopes (Dean 1987; Tyson 1982). One of the most well known is the so-called Barnum effect, the tendency for people to accept vague, ambiguous, and general statements as descriptive of their unique personalities.

There are two differing reasons given in the literature for naming this inclination to believe "the Barnum effect," although both are based on quotations from P. T. Barnum. The first is that the famous circus-owner maintained that his secret of success was always to have a little something for everyone. Likewise, the typical astrological personality profile consists of a collection of statements carefully selected to enable everyone to see something of themselves in the description. The second, more cynical reason is that Barnum's most infamous phrase was, of course, "There's a sucker born every minute."

The best way to appreciate the force of the



The simple Barnum effect provides the best explanation for belief in astrology, regardless of the professed level of belief.

Barnum effect is to actually read a typical Barnum profile. Try it:

> You have a great need for other people to like you and admire you. You have a tendency to be critical of yourself. You have a great deal of unused capacity which you have not used to your advantage. While you have some personality weaknesses, you are generally able to compensate for them. Your sexual adjustment has presented problems for you. Disciplined and self-controlled outside, you tend to be worrisome and insecure inside. At times you have serious doubts as to whether you have made the right decision or done the right thing. You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations. You pride yourself on being an independent thinker and do not accept others' statements without satisfactory proof. You have found it unwise to be too frank in revealing yourself to others. At times you are extraverted, affable and sociable, while at other times you are introverted, wary and reserved. Some of your aspirations tend to be pretty unrealistic. Security is one of your major goals in life.

Typically, a naive subject reading the personality description above would be impressed by its accuracy if told that the description was based upon his or her horoscope. This profile was actually first used in a study some 40 years ago (Forer 1949), but its appeal is as strong today as it was then.

It is important to realize that the Barnum effect does not apply only to personality descriptions supposedly based upon horoscopes. The effect is found if the profile is said to be based upon any form of personality assessment, including palmistry, objective psychological tests, projective tests, personal interview, graphology, or Tarot cards. A considerable amount of research has been done on the psychological factors that influence the Barnum effect. Although a detailed review of these studies is beyond the scope of this discussion (see Dickson and Kelly 1985; Furnham and Schofield 1987; Snyder, Shenkel, and Lowery 1977), it is clear that the effect is an important factor in the acceptance of horoscopes (see, e.g., studies by Rosen 1975; Snyder 1974; Snyder, Larsen, and Bloom 1976).

However, not all statements in horoscopes are Barnum-type statements. For example, the typical "Aries" is said to be bold, energetic, assertive, selfish, insensitive, and aggressive. Surely, not everyone would see themselves as fitting this description. But, as Sundberg (1955) pointed out, Barnum profiles consist of a variety of statements:

> Vague, e.g., "You enjoy a certain amount of change and variety in life"; double-headed, e.g., "You are generally cheerful and optimistic but get depressed at times"; modal characteristics of the subject's group, e.g., "You find that study is not always easy"; favorable, e.g., "You are forceful and well-liked by others."

The typical horoscope is a mix of general statements and rather more specific ones. People tend to be impressed by the specific details that appear to fit (and pay less attention to those that do not), while the general Barnum-type statements provide readily acceptable "padding."

It seemed possible to us that different psychological mechanisms might be required to explain the formation and maintenance of belief in strong believers compared with moderate believers. One possibility was suggested by Goldberg (1979). Some "Virgos" actually will, by chance alone, have the personality character-

istics typically associated with that sun-sign, and similarly for all of the other sun-signs. Such people will be constantly amazed at the accuracy of horoscopes based upon this information and are far more likely to take their interest in the subject further than those who feel that the personality descriptions typical for their sun-signs are not appropriate—such as a timid "Aries." The believer is likely to buy popular books on astrology and be attracted to others with an interest in astrology, and some of these others will by coincidence be typical examples of *their* sun-signs, providing for the believer seemingly incontrovertible proof that astrology is valid. We shall henceforth refer to this model as the "Coincidence Hypothesis," as the original match between the typical sun-sign profile and the individual's personality is totally coincidental.

The scenario above, although speculative, seemed plausible to us and led to some testable hypotheses. If different mechanisms are responsible for producing different levels of belief in the way described, then we would predict that strong believers would show *less* acceptance of the Barnum-type profile than moderate believers, for the following reasons. Strong believers would be likely to have more knowledge of the typical characteristics associated with sun-signs, particularly the believers' own signs. Therefore they would be more impressed by reading a description that corresponded to this typical pattern and contained reference to specific expected traits than by the more general Barnum-type description. Furthermore, strong believers would rate horoscopes cast on the basis of their birth details (henceforth referred to as "genuine" horoscopes) as more accurate than randomly selected horoscopes ("false" horoscopes). Moderate believers, on the other hand, would not be as inclined to look for the typical profile because they are unlikely to possess detailed knowledge of typical sun-sign profiles. Moderate believers are likely to be more impressed by the carefully selected Barnum-type statements and to be less able to distinguish between genuine and false horoscopes. All of these effects would be relative, of course, since even moderate believers may have some knowledge of their typical sun-sign profiles.

An alternative hypothesis maintains simply that the Barnum effect will be equally strong for everyone and that some other (unspecified) factor is required to account for differences in belief between strong and moderate believers (see Dean 1987, for possibilities). In this case, one would argue that the effectiveness of horoscopes is due largely to the Barnum effect and that genuine horoscopes are effective only to the extent that they incidentally capitalize on the effect. We would predict a different pattern of results on the basis of this hypothesis. Both genuine and Barnum-type horoscopes would be judged as accurate by all believers, but the Barnum profile ought to be judged as more accurate, as the careful selection of statements would maximize the effect. Furthermore, there would be no difference in the perceived accuracy of genuine and false horoscopes. We shall refer to this hypothesis simply as the "Barnum Hypothesis."

A third hypothesis, which has already been thoroughly discredited, can also be outlined. The "Astrological Hypothesis" would maintain that the position of the stars and planets at birth really does influence the formation of personality as outlined in traditional astrology. If this were so, everyone, regardless of degree of belief, ought to rate genuine horo-

scopes as more accurate than either false or Barnum-type horoscopes.

In order to test these hypotheses, data were collected from 52 subjects, most of whom were attending a sixth-form college. Ages ranged from 16 to 35, with a mean age of 18. Thirty-five of the subjects were female. Subjects were told that the study was an assessment of three different computer programs for casting horoscopes and were initially asked to provide information on their date, time, and place of birth as well as information relating to their belief in and knowledge of astrology.

Several days after collection of the initial data, each subject was presented with a booklet containing a "genuine" horoscope, a randomly selected ("false") horoscope, and a Barnum-type horoscope. The order of the horoscopes was counterbalanced across subjects. The genuine horoscopes were cast using a modified version of the HOROSCOPICS program (Copyright 1983, Patched by PAS Inc., 306 S. Homewood Ave., Pittsburgh, PA 15208) run on an IBM XT personal computer. The program casts a horoscope on the basis of the date of birth only and produces a profile consisting of a dozen statements (a typical example of the output is shown in Figure 1). The program was modified to produce output consisting solely of the personality profile, omitting the astrological data upon which the interpretation was based. The false horoscopes were randomly selected horoscopes from the pool of genuine horoscopes, so that the two pools were in fact identical. The Barnum horoscope was the same as the one presented earlier except that one sentence ("Your sexual adjustment has presented problems for you") was omitted in order to equate the number of statements in each horoscope. The horoscopes were all presented on computer print-out paper with the same layout. Subjects were asked to read and rate each horoscope before considering the next one.

Of the 52 subjects, 7 stated that they believed in astrology "strongly," 31 "moderately," and 14 "not at all." There was a striking difference in distribution between male and female subjects. All 7 strong believers were

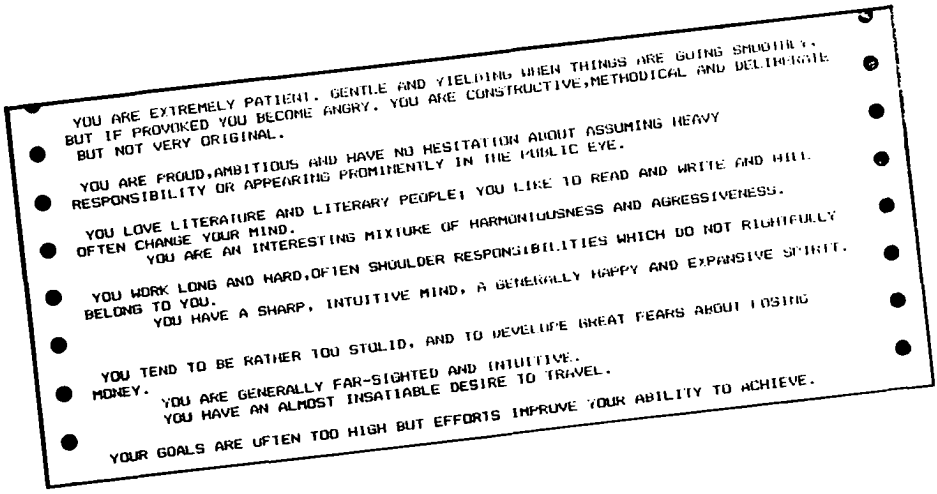

YOU ARE EXTREMELY PATIENT. GENTLE AND YIELDING WHEN THINGS ARE GOING SMOOTHLY.
BUT IF PROVOKED YOU BECOME ANGRY. YOU ARE CONSTRUCTIVE,METHODICAL AND DELIBERATE
BUT NOT VERY ORIGINAL.
YOU ARE PROUD,AMBITIOUS AND HAVE NO HESITATION ABOUT ASSUMING HEAVY
RESPONSIBILITY OR APPEARING PROMINENTLY IN THE PUBLIC EYE.
YOU LOVE LITERATURE AND LITERARY PEOPLE; YOU LIKE TO READ AND WRITE AND HELP
OFTEN CHANGE YOUR MIND.
YOU ARE AN INTERESTING MIXTURE OF HARMONIOUSNESS AND AGRESSIVENESS.
YOU WORK LONG AND HARD,OFTEN SHOULDER RESPONSIBILITIES WHICH DO NOT RIGHTFULLY
BELONG TO YOU.
YOU HAVE A SHARP, INTUITIVE MIND, A GENERALLY HAPPY AND EXPANSIVE SPIRIT.
YOU TEND TO BE RATHER TOO STOLID, AND TO DEVELOPE GREAT FEARS ABOUT LOSING
MONEY.
YOU ARE GENERALLY FAR-SIGHTED AND INTUITIVE.
YOU HAVE AN ALMOST INSATIABLE DESIRE TO TRAVEL.
YOUR GOALS ARE OFTEN TOO HIGH BUT EFFORTS IMPROVE YOUR ABILITY TO ACHIEVE.

FIGURE 1: A typical example of the computerized horoscope used in this study.

female, as were 25 out of 31 moderate believers. Only 3 of 14 disbelievers were female (chi-square = 19.3, df = 2, $p < 0.0001$). This finding is in line with previous research showing that more women than men believe in astrology and are interested in their horoscopes (e.g., DeFrance, Fischler, Morin, and Petrossian 1971; Gallup 1975; Sobal and Emmons 1982; Wuthnow 1976).

As would be expected, level of belief was significantly correlated with self-reported frequency of reading newspaper horoscopes, with self-assessed knowledge of astrology, and with self-assessed influence of astrology on subjects' everyday lives. The initial questionnaire also included a question asking subjects to write down their sun sign, ascendant, and moon sign, if known. This allowed for a maximum score of three on this rather crude measure of astrological knowledge, which was also found to correlate significantly with belief.

The second questionnaire asked subjects to rate how accurate they felt each horoscope was on a scale from one (not at all accurate) to five (completely accurate). The mean ratings of each group are shown in Table 1.

In order to test the experimental hypotheses, data were subjected to a two-way analysis of variance with type of horoscope and level of belief as factors. The only significant effect was related to type of horoscope ($F(2, 98) = 4.95$, $p < 0.01$), and reflected the fact that the Barnum horoscope was rated as much more accurate than the other two. No significant difference was found between the ratings of the genuine and false horoscopes and no interaction was found between type of horoscope and level of belief.

It might be objected that the reason that people so readily accept the Barnum profile is that the statements in it actually *do* apply to everyone. If so, then people are behaving quite rationally in rating its accuracy so highly. It is therefore important to show that people rate the Barnum profile as highly accurate while at the same time not realizing its general applicability. Therefore we asked subjects to rate how general they found the horoscopes on a scale from one to four (1 = very general; 2 = quite general; 3 = quite applicable to you personally; 4 = very applicable to you personally). Mean ratings are presented in Table 2.

Once again, these data were analyzed using a two-way analysis of variance with type of horoscope and level of belief as factors and, once again, the only significant effect was that the Barnum profile was rated as *more* applicable than the other two ($F(2, 98) = 5.35$, $p < 0.01$). The genuine and false horoscopes did not differ in applicability ratings.

A final question on the questionnaire asked subjects, for each horoscope, if they felt that it constituted evidence for astrological belief. Twenty subjects out of 52 felt that the Barnum profile constituted such evidence, whereas only 12 and 11, respectively, felt this way about the false and genuine horoscopes. These proportions are significantly different (Cochran's Q = 10.43, df = 2, $p < 0.01$).

There can be no doubt that this experiment offers strong support for the Barnum Hypothesis and no support whatsoever for the Coincidence Hypothesis or the Astrological Hypothesis, at least for the sample under study. It might be objected that the group of strong believers was small in comparison with the other two groups; but as examination of the tables reveals, there was no sign of a trend in favor of either of the latter hypotheses. In fact, this group tended to be more influenced by the Barnum

TABLE 1
Means (and Standard Deviations) for Accuracy Ratings (on a Scale of 1 to 5) for Barnum, False, and Genuine Horoscopes

	Barnum	False	Genuine
Strong Belief (N = 7)	4.14 (1.07)	3.29 (1.11)	3.29 (0.76)
Moderate Belief (N = 31)	3.77 (0.85)	3.00 (1.06)	3.16 (0.90)
No Belief (N = 14)	3.29 (1.49)	3.07 (1.14)	2.79 (1.25)
Entire Group (N = 52)	3.69 (1.09)	3.06 (1.07)	3.08 (0.99)

TABLE 2
Means (and Standard Deviations) for Applicability Ratings for Barnum, False, and Genuine Horoscopes

	Barnum	False	Genuine
Strong Belief (N = 7)	2.96 (1.08)	2.33 (0.96)	2.42 (0.94)
Moderate Belief (N = 31)	3.29 (1.11)	2.86 (0.90)	2.57 (0.79)
No Belief (N = 14)	2.97 (1.05)	2.26 (0.93)	2.48 (0.85)
Entire Group (N = 52)	2.79 (1.19)	2.21 (1.05)	2.21 (1.19)

profile than the other two groups, although this effect did not reach statistical significance. The nonbelievers tended to be least influenced by the Barnum effect. Perhaps with larger samples these effects would have reached significance.

To summarize, the Barnum profile was rated as most accurate and most personally applicable by all groups, as predicted by the Barnum Hypothesis. Furthermore, a significantly greater number of subjects felt that the Barnum profile, compared with the other two horoscopes, constituted evidence in favor of astrology. No interaction was found between level of belief and type of horoscope, thus failing to support the Coincidence Hypothesis. No support was found for the Astrological Hypothesis. No group was able to differentiate the genuine from false horoscopes, which were both rated as less accurate and less applicable than the Barnum profile.

For this sample, then, the Barnum effect offered the best explanation of belief in astrology. However, we may need to be cautious in generalizing these results too widely. The strong believers did claim and demonstrate more knowledge of astrology than the other two groups, but their level of knowledge was still not very great, as might be expected in a study where the average age of the subjects was 18. A more refined version of the Coincidence Hypothesis would recognize the many levels of astrological knowledge attainable and the possibly complex interactions that this could produce in studies like this one when applied to different subject groups.

At the lowest level are those who profess no knowledge of astrology. Next are those who have some vague notion of their sun-sign and its associated characteristics, followed by those who may take astrology seriously enough to buy popular books on the subject. The Coincidence Hypothesis as outlined earlier in this article applies to these three levels. However, beyond sun-sign astrology we have what Dean (1986-87) refers to as "the real thing," involving a consultation between a professional astrologer and a client in which the

astrologer's interpretation is based upon as many as 40 interacting chart factors, of which sun-sign is only one. As Eysenck and Nias (1982) discuss, it is possible that those who are very knowledgeable would not be so influenced by consideration of the sun-sign, recognizing instead that "real" astrology is a much more complex enterprise.

The fact remains, however, that most people who profess a belief in astrology, whether strong or moderate, do not possess much knowledge of the subject. It is of great interest to understand the factors that produce belief in such individuals, and the current study strongly suggests that we need look no further than the basic Barnum effect.

References

Culver, R., and P. Ianna. 1988. *Astrology: True or False?* Buffalo, N.Y.: Prometheus Books.

Dean, G. 1986-87. Does astrology need to be true? Part 1: A look at the real thing. SKEPTICAL INQUIRER, 11:166-184.

———. 1987. Does astrology need to be true? Part 2: The answer is no. SKEPTICAL INQUIRER, 11:257-273.

Dean, G., and A. Mather. 1977. *Recent Advances in Natal Astrology: A Critical Review 1900-1976.* Subiaco, Western Australia: Analogic.

DeFrance, P., C. Fischler, E. Morin, and L. Petrossian. 1971. *Le Retour des Astrologues.* Paris: Cahiers du Club Nouvel Observateur.

Dickson, D. H., and I. W. Kelly. 1985. The 'Barnum effect' in personality assessment: A review of the literature. *Psychological Reports,* 57:367-382.

Eysenck, H. J., and D. K. B. Nias. 1982. *Astrology: Science or Superstition?* London: Temple Smith.

Forer, B. R. 1949. The fallacy of personal validation: A classroom demonstration of gullibility. *Journal of Abnormal and Social Psychology,* 44:118-123.

Furnham, A., and S. Schofield. 1987. Accepting personality test feedback: A review of the Barnum effect. *Current Psychological Research & Reviews,* 6:162-178.

Gallup, G. H. 1975. Thirty-two million Americans express belief in astrology. *Gallup Poll.* Institute of Public Opinion. October 19.

Gauquelin, M. 1979. *Dreams and Illusions of Astrology.* Buffalo, N.Y.: Prometheus Books.

Goldberg, S. 1979. Is astrology a science? *The Humanist,* 39(2):9-16.

Jerome, L. 1977. *Astrology Disproved.* Buffalo, N.Y.: Prometheus Books.

Kelly, I. W. 1979. Astrology and science: A critical examination. *Psychological Reports,* 44:1231-1240.

Rosen, G. M. 1975. Effects of source prestige on subjects' acceptance of the Barnum effect: Psychologist versus astrologer. *Journal of Consulting and Clinical Psychology,* 43:95.

Snyder, C. R. 1974. Why horoscopes are true: The effect of specificity on acceptance of astrological interpretations. *Journal of Clinical Psychology,* 30:577-580.

Snyder, C. R., D. K. Larsen, and L. J. Bloom. 1976. Acceptance of general personality interpretations prior to and after receiving diagnostic feedback supposedly based on psychological, graphological, and astrological assessment procedures. *Journal of Clinical Psychology,* 32:258-265.

Snyder, C. R., R. J. Shenkel, and C. R. Lowery. 1977. Acceptance of personality interpretations: The "Barnum effect" and beyond. *Journal of Consulting and Clinical Psychology,* 45:104-114.

Sobal, J., and C. F. Emmons. 1982. Patterns of belief in religious, psychic, and other paranormal phenomena. *Zetetic Scholar,* 9:7-17.

Startup, M. J. 1984. *The Validity of Astrological Theory as Applied to Personality, with Special Reference to the Angular Separation Between Planets.* Ph.D. thesis, Goldsmiths' College, London University; 350 references.

Sundberg, N. D. 1955. The acceptance of "fake" versus "bona fide" personality test interpretations. *Journal of Abnormal and Social Psychology,* 50:145-147.

Tyson, G. A. 1982. Why people perceive horoscopes as being true: A review. *Bulletin of the British Psychological Society,* 35:186-188.

Wuthnow, R. 1976. Astrology and marginality. *Journal for the Scientific Study of Religion,* 15:157-168.

Address correspondence to Dr. Christopher C. French, Dept. of Psychology, University of London Goldsmiths' College, New Cross, London SE14 6NW, U.K.

A Test of Clairvoyance

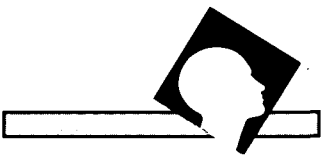
Using the Method Of Signal Detection

STUART J. McKELVIE and HÉLÈNE GAGNÉ

Despite years of intensive research, ESP (extrasensory perception) experiments have not produced a finding that meets the scientific criterion of replication under controlled laboratory conditions (Marks 1986). Although some positive results have been reported, the methods by which they were obtained and statistically analyzed have been criticized (Diaconis 1978; Hansel 1980; Hines 1988; Hyman 1989; Alcock 1990).

Recently, in the SKEPTICAL INQUIRER, D. D. Jensen (1989) has suggested that modern psychophysics offers a paradigm for testing paranormal perceptions. In the method of signal detection, the observers are presented with a series of trials in which a signal does or does not occur and, for each trial, are asked to state whether or not they detect a signal. At the end of the experiment, each response can be classified as a "hit" (responding yes when a signal is present), "false-alarm" (responding yes when a signal is absent), "miss" (responding no to a signal), or "correct rejection" (responding no to no signal). (See Table 1.) As Jensen explains, the beauty of this method is that it permits the experimenter to go beyond the simple hit rate, which might be taken to measure accuracy of detection, and to calculate two measures, d' and beta, which respectively provide uncontaminated measures of sensitivity to the signal and the degree of response bias (the general tendency to say yes or no).

Surprisingly, we have not been able to locate any reports in which this method has been



Students classified as believers or nonbelievers in the paranormal were tested twice in a signal-detection task. In one of the two conditions (clairvoyance), no signal was ever given, but half of the trials were randomly designated by computer as containing "pseudosignals." In both the signal and no-signal conditions, detection performance was similar for the two groups, and no evidence of clairvoyance was found.

TABLE 1
Classification of Responses in the Signal Detection Task

Trial	Response: Yes	Response: No
Signal Present	Hit	Miss
Signal Absent	False-alarm	Correct Rejection

applied to test ESP in a laboratory setting. We accomplished it here by testing subjects in two conditions. In the standard signal-detection condition, signals were presented on half of the trials. In the ESP or clairvoyance condition, no signal was ever presented. However, in both conditions, subjects were told to expect a signal half of the time; and, in the clairvoyance condition, half of the trials were designated at random by computer as "pseudosignal" trials. Thus it was possible to calculate d' for each subject in both conditions. Clairvoyance would allow a subject to "know" when the pseudosignal trial occurred; and so, if clairvoyance were present, the mean value for d' would exceed zero in the no-signal condition.

In addition, the factor of belief in the paranormal was included, since Palmer (1971) claims that the data support a small, but genuine, superiority of believers over nonbelievers in ESP tasks (the "sheep-goat" effect). However, there is also evidence that believers subjectively rate their performances as higher than those of others (Blackmore and Troscianko 1985; Benassi, Sweeney, and Drevno 1979). It might therefore be expected that believers would respond more leniently (decreasing beta) than nonbelievers, particularly in the clairvoyance condition.

Subjects. Subjects were 53 undergraduates classified as believers (N = 26) or nonbelievers (N = 27). The two groups were chosen on the basis of their scores on the Survey of Paranormal Beliefs (Tobacyk and Milford 1983) from a larger sample of 136 undergraduates. The scores of believers and nonbelievers fell in the upper and lower 30 percent of the original distribution, respectively.

Design and Procedure. Each subject was tested individually on an Apple IIe computer in both conditions, with half receiving the signal condition first (200 trials) and half the no-signal (clairvoyance) condition first (200 trials). On each trial, a series of 20 letters flashed rapidly at random locations on the screen. On no-signal trials, the letters were all Os; but on signal trials, 19 were Os and one was a Q. Subjects were told that a Q would be presented on half of the trials and that they should respond after each trial by pressing one key if they detected it and another one if they did not. The computer program (Perera 1983) converted each subject's responses to hits, false-alarms, d', and beta.

Results and Discussion

Table 2 displays the mean scores in each condition for believers and nonbelievers. Two-way analyses of variance (Condition × Belief) were performed on each of the four measures. In each case, the only significant effect was Condition: $F(1, 51)$ = 30.11, 14.37, 104.42, and 24.06, for hits, false-alarms, d', and beta, respectively, ($p < .01$ in all cases).

TABLE 2
Mean Scores on Each Measure in Each Condition

Condition	Hits	False-alarms	d'	Beta
Signal				
Believers	51.3	33.1	0.48	1.15
Nonbelievers	49.4	31.6	0.50	1.10
No-Signal (Clairvoyance)				
Believers	36.0	36.4	-0.01	1.00
Nonbelievers	40.0	40.0	0.00	0.97

It can be seen that there were more hits and fewer false-alarms, leading to higher d' scores in the signal condition than in the no-signal (clairvoyance) condition, showing that subjects were more accurate at detecting signals in the signal condition. Moreover, in the no-signal condition the mean d' score was 0 for both believers and nonbelievers. Although the percentage of hits in the no-signal condition was 35 to 40 percent, suggesting some ability to detect the pseudosignals, it was accompanied by a similar percentage of false-alarms. This implies that hits on signal trials did not necessarily indicate true detections. Hence, d' = 0, a result that is consistent with other laboratory attempts to demonstrate ESP, and inconsistent with the sheep-goat effect (Palmer 1971).

Finally, there was no evidence that believers were more lenient than nonbelievers in responding, since the mean values for beta were similar for the two groups in both the signal and clairvoyance conditions. Previous demonstrations (Benassi et al. 1979; Blackmore and Troscianko 1985) of greater leniency in believers were found for post hoc estimates of performance in psychokinesis tasks, suggesting that the effect may be confined to subjective evaluations, to a task involving perceived control, or to both, i.e., to situations involving an illusion of control (Blackmore and Troscianko 1985). The present result does not support the contention that the effect simply reflects general response leniency.

This application of the signal-detection method provides no evidence of clairvoyance in either believers or nonbelievers and found similar performance measures (d' and beta) for believers and nonbelievers in both signal and no-signal conditions, with both groups showing sensitivity in the signal condition and zero sensitivity in the no-signal condition.

References

Alcock, J. 1990. *Science and Supernature,* Buffalo, N.Y.: Prometheus Books.

Benassi, V. A., P. D. Sweeney, and G. E. Drevno. 1979. Mind over matter: Perceived success at psychokinesis. *Journal of Personality and Social Psychology,* 37:1377-1386.

Blackmore, S., and T. Troscianko. 1985. Belief in the paranormal: Probability judgements, illusory control, and the "chance baseline shift." *British Journal of Psychology,* 76:459-468.

Diaconis, P. 1978. Statistical problems in ESP research. *Science,* 201:131-136.

Hansel, C. E. M. 1980. *ESP and Parapsychology: A Critical Re-Evaluation.* Buffalo, N.Y.: Prometheus Books.

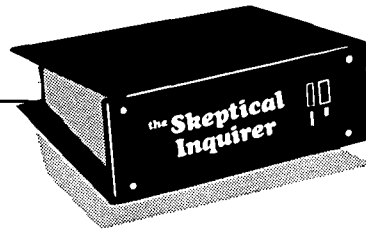
Hines, T. 1988. *Pseudoscience and the Paranormal.* Buffalo, N.Y.: Prometheus Books.

Hyman, R. 1989. *The Elusive Quarry.* Buffalo, N.Y.: Prometheus Books.

Jensen, D. D. 1989. Pathologies of science, precognition, and modern psychophysics. SKEPTICAL INQUIRER, 13:147-160.

Marks, D. F. 1986. Investigating the paranormal. *Nature*, 320:119-124.
Palmer, J. 1971. Scoring in ESP tasks as a function of belief in ESP. *Journal of the American Society for Psychical Research*, 65:373-408.
Perera, T. B. 1983. *Signal Detection* (computer program). New York: Life Science Associates. (Ed. by Dirk Houben, Hunter College of CUNY.)
Tobacyk, J., and G. Milford. 1983. Belief in paranormal phenomena: Assessment instrument development and implications for personality functioning. *Journal of Personality and Social Psychology*, 44:1029-1037.

Stuart McKelvie is in the Department of Psychology, Bishop's University, Lennoxville, Quebec J1M 1Z7, Canada. Hélène Gagné is now with the Ontario Prevention Clearing House in Toronto.



To preserve your copies of

Skeptical Inquirer

Order handsome and durable library binders $7.95

Please send me _____ Skeptical Inquirer Binders. **Total $**_____
(plus $1.50 for one, 50¢ for each additional binder, for postage and handling.)

Visa and MasterCard customers call **Toll-Free 800-634-1610**
(In NYS call 716-834-3222)

☐ Check or money order enclosed

Charge my ☐ MasterCard ☐ Visa

_____ Exp. _____

Name (PLEASE PRINT)

Address

City State Zip

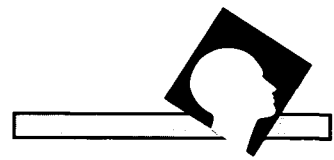
Skeptical Inquirer • Box 229 • Buffalo, N.Y. 14215-0229

Intercessory Prayer As Medical Treatment?

An Inquiry

JEFF WITMER and MICHAEL ZIMMERMAN

The use of prayer as a medical treatment has been in the news quite a bit of late, with the government successfully prosecuting parents whose avoidance of traditional treatment in favor of prayer led to the death of their sick minor children. The critical question that must be addressed to parents, doctors, and the courts alike is: Can prayer have beneficial medical effects? While this question is by no means new, it has received surprisingly little critical evaluation over the years.



A review of the sparse literature and a survey of editors of 38 medical journals raises troubling concerns.

Prayer can be divided into two types: personal and intercessory. The former occurs when individuals pray on their own behalf, while the latter occurs when a prayer is offered on behalf of another individual. Personal prayer might well have a therapeutic effect by elevating the psychological state of the person praying, perhaps in much the same way Norman Cousins (1979) claims humor works. Intercessory prayer, if the targeted person is aware that he or she is being spoken for, might yield similar psychological benefit arising from the knowledge that others care deeply enough to pray.

Much more interesting for study are the possible therapeutic effects of intercessory prayer when the person being prayed for remains entirely unaware of the prayers. One of the first to discuss the possible medical use of this type of prayer was Sir Francis Galton (1883), who hypothesized that monarchs were far more likely to be the objects of prayer than were commoners. If intercessory prayer actually

provided medical benefits, Galton hypothesized, then the former should live longer than the latter, all else being equal. Although all else clearly was not equal, no trend in the hypothesized direction was found.

A century after Galton's work was published, Randolph Byrd (1988) published a paper in the *Southern Medical Journal* purporting to demonstrate the significant therapeutic value of intercessory prayer in a coronary-care unit of San Francisco General Hospital. Summaries of Byrd's claims were published in the popular press and prompted considerable attention. Using a double-blind design, Byrd randomly assigned patients entering the unit to either a control or an experimental group. Members of both groups were given standard medical care, but only members of the experimental group were prayed for daily by volunteers from local churches. Patients were unaware that they were part of a study. At the conclusion of the study Byrd assessed the course of treatment for each patient and concluded that members of the experimental group fared significantly better.

Byrd's paper, while piquing our interest in the general field of intercessory prayer, raised a number of statistical and procedural questions in our minds. Statistically, Byrd's paper is unsatisfactory because it did not treat patients as individual entities. In a multivariate analysis of complications arising after hospital admittance, Byrd found that his experimental subjects suffered statistically fewer complications than did his controls. Unfortunately, many of the complications listed are not independent of one another so that a single patient was more likely to manifest a range of symptoms rather than just one. Because of this problem Byrd's analysis is not persuasive and there is no way to assess the efficacy of the prayers. Procedurally, Byrd reported that the intercessors were given pertinent updates on the conditions of the patients for whom they were praying. Such interim reports are at odds with the usual double-blind protocol.

Because Byrd's results were intriguing, if not fully substantiated, we began to wonder if any other studies attempted controlled examinations of the effects of intercessory prayer. An exhaustive literature search turned up only two additional papers (Joyce and Weldon 1965; Collipp 1969), neither of which provided statistical support for the efficacy of intercessory prayer. Joyce and Weldon studied 19 matched pairs of patients with rheumatic disease in a double-blind, randomized trial. In the 12 pairs for which there was a difference in patient response, the treatment patient (the one for whom others prayed as part of the trial) fared better than the control patient seven times, while the control patient fared better five times. Collipp's (1969) study reported a trial in which church members prayed for ten children with leukemia, who were compared with eight control children with the disease. The difference in survival between the two groups was not statistically significant.

Given the widespread belief in the power of prayer, we were quite surprised to find that such a dearth of controlled, randomized studies exists in the literature. There are a number of reasons why this might be the case. One possibility is the "file drawer" phenomenon: researchers, knowing that journals favor significant positive findings, might not submit work failing to show statistically significant differences between control and experimental groups.

And, even if such work is submitted, editors might reject it because of the lack of statistical significance. Such a negative publication bias has been well documented in other fields (e.g., see Begg and Berlin 1988). Furthermore, editors wise enough to know the value of reporting carefully conducted scientific work, even if it shows no statistically significant differences between control and experimental groups, might reject manuscripts dealing with intercessory prayer, thinking that studies of supernatural power are inherently nonscientific. Still other editors might shy away from publishing work simply because it is controversial. Indeed, when the second edition of Galton's book was published, the material on intercessory prayer was omitted for this reason (Pearson, 1924-1930, vol. 3B).

Given all of these possibilities, we anticipated that a sizable body of unpublished work in this area might exist. In an attempt to tap into some of this material, we wrote to the editors of 38 medical journals, asking if their journal had ever published a paper on the subject. We also asked whether the journal had ever received, but rejected, a manuscript on the topic. Finally, we asked editors to publish a request for information. That request asked readers to contact us if they were aware of any controlled studies, either published or unpublished, assessing the efficacy of intercessory prayer. It also invited readers to send us the names of persons who might know of such material.

The responses from the editors were unequivocal. None of those who responded had either published or rejected a single manuscript on the topic of intercessory prayer. The response to our published queries was also unequivocal. Although we received a barrage of letters and phone calls, some from firm "believers," others from persons quite angered that anyone would conduct a scientific trial involving prayer, not a single piece of evidence of any controlled trials beyond the three we had already discovered was mentioned.

Rather than hearing from persons who believe in the benefits of intercessory prayer as a result of a scientific study, we heard a series of anecdotes. Some believe because they have "seen it work" (e.g., they know someone who recovered from serious illness because of prayer). Others have been told that prayer works. And time and time again we heard from persons who, although they had conducted no controlled studies themselves, gave us the names of others who they thought had done so. We pursued each of these leads only to find people who had conducted no trials, but "knew" of people elsewhere who they thought had run controlled studies, and so on. Sometimes, amusingly, these trails went full circle. It is worth noting that the vast majority of respondents were either practicing or retired medical doctors.

Our concerns are twofold. One is that advocates of any medical treatment have an obligation to conduct appropriate studies before making extensive claims regarding effectiveness. In the case of intercessory prayer, these studies have yet to be undertaken. Note that we are not making a statement here about whether or not intercessory prayer is effective. (Indeed, while one of us is an atheist, the other is a Christian.) Neither are we advocating that clinical trials of intercessory prayer be conducted—we are not the ones who claim that intercessory prayer is an effective medical treatment. Rather, we demonstrate the present lack of scientific evidence supporting the claim that intercessory prayer is beneficial.

Our other concern is deeper and more troubling. All of us are tempted to take our own limited experiences and necessarily (because we are human) biased observations and theories seriously. We also tend to rely on authority in making decisions about the worth of various methods and agents. In the area of intercessory prayer, we see people confusing anecdotal evidence with scientific research. In fact, many people were very eager to tell us why they think that intercessory prayer is therapeutic, but were quite disappointed (and occasionally quite distressed) when we told them that we were looking for evidence from controlled scientific studies. Such confusion should alarm not only all scientists, but anyone concerned about the health and safety of others.

It is particularly troubling that medical practitioners seem so willing to confuse anecdote and verifiable pattern. That such was the case might well point out a real shortcoming of medical education.

Acknowledgments

We thank Abby Frucht for suggesting improvements in an earlier draft of our manuscript. We are also grateful to those editors who took the time to respond to our survey, to those who published our request for information, and to those respondents who took the time to contact us.

References

Begg, C. B. and J. A. Berlin. 1988. Publication bias: A problem in interpreting medical data. *Journal of the Royal Statistical Society,* 151:419-463.

Byrd, R. C. 1988. Positive therapeutic effects of intercessory prayer in a coronary unit population. *Southern Medical Journal,* 81:826-829.

Collipp, P. J. 1969. The efficacy of prayer: A triple-blind study. *Medical Times,* 97:201-204.

Cousins, N. 1979. *Anatomy of an Illness.* W. W. Norton: New York.

Galton, F. 1883. *Inquiries into Human Faculty and Its Development.* London: Macmillan. (Second edition published in 1907 by Dent.)

Joyce, C. R. B., and R. M. C. Weldon. 1965. The objective efficacy of prayer: A double-blind clinical trial. *Journal of Chronic Diseases,* 18:367-377.

Pearson, K. 1924-1930. *The Life, Letters and Labours of Francis Galton.* Cambridge, U.K.: Cambridge University Press.

Jeff Witmer is a statistician in the Department of Mathematics, and Michael Zimmerman is associate dean of the College of Arts and Sciences and a professor in the Department of Biology, Oberlin College, Oberlin, OH 44074.

A Reminder . . .

All *subscription* correspondence (new subscriptions, renewals, back-issue orders, billing problems) should be addressed to:

SKEPTICAL INQUIRER, Box 229, Buffalo, NY 14215-0229

All *editorial* correspondence (manuscripts, letters to the editor, books for review, authors' queries) should be addressed to the Editor's office in Albuquerque:

Kendrick Frazier, Editor, The SKEPTICAL INQUIRER, 3025 Palo Alto Dr. N.E., Albuquerque, NM 87111

Inquiries concerning CSICOP programs or policies should be addressed to:

Paul Kurtz, Chairman, CSICOP, Box 229, Buffalo, NY 14215-0229

Book Reviews

Examining Another UFO 'True Story'

Out There: The Government's Secret Quest for Extraterrestrials. By Howard Blum. Simon & Schuster, New York, 1990. 288 pp. Cloth, $19.95.

PHILIP J. KLASS

In the opening page of *Out There: The Government's Secret Quest for Extraterrestrials,* former *New York Times* reporter Howard Blum, whose earlier books include one on the Walker spy family, assures his readers: "This is a true story. I verified every name, every incident, date and conversation." The publisher's blurb on the review copy characterizes the book as a "startling exposé that reads with the dramatic narrative drive of a novel but . . . it is absolutely true!"

The cornerstone of Blum's book is his claim that in early 1987 the Pentagon's Defense Intelligence Agency (DIA) secretly launched a new investigation into UFOs—Unidentified Flying Objects. Approximately 18 years earlier the Pentagon had announced that after two decades it was closing down the Air Force's investigatory effort because it had found no evidence that any UFOs were either extraterrestrial or Soviet craft.

Blum claims the Pentagon's new interest in UFOs was triggered by an extraordinary incident shortly before Christmas 1986. It allegedly involved the Navy Space Surveillance System, a key element in the global Space Surveillance Network operated by the U.S. Space Command.

The Navy Space Surveillance System is an "electronic fence" that stretches across the southern states from the Atlantic to the Pacific oceans. It was built in the late 1950s, following the launch of the first Soviet satellites, to maintain a running inventory of all objects in space—both satellites and space debris—that pass over the United States.

As Blum describes the incident, Navy Commander Sheila Mondran was on duty in Space Command's underground command center, deep inside Cheyenne Mountain near Colorado Springs, when a computer display showed that a strange, uncatalogued object was passing through the electronic fence. According to Blum, the object was performing "crash dives followed by sudden climbs at astonishing speeds."

Had Blum checked, he would have discovered that the Navy's electronic fence could not possibly detect such maneuvers—as I earlier learned when I wrote a technical article on the system. Furthermore, the system does not provide a "real-time" display in the Space Defense Center, which Blum claims Mondran was viewing.

Blum's dramatic scenario of events

alleged to have triggered the Pentagon's renewed interest in UFOs is riddled with errors. For example, he reports that Commander Mondran, after parking her car outside Cheyenne Mountain, rode a military bus inside and "took a polished steel elevator . . . descending almost 2,500 feet." There is no such elevator—as I know from my several visits to the underground center. The only elevator is a three-story freight elevator.

The military bus would have delivered Commander Mondran to the "ground floor" of the command center inside Cheyenne Mountain. She would have walked up one flight of stairs to the Space Defense Center, which is on the *second* floor, not the third floor as Blum reports. (Blum claims he called Space Command's public-affairs office to ask which floor it was on as an example of his meticulous research.)

In response to my request to Space Command's public-affairs office, Major Tom Niemann told me he could find no record that a Commander Sheila Mondran had ever been stationed there. When he checked with the Navy, Niemann told me, they could not find any record of an officer named Sheila Mondran.

Blum describes experiments allegedly conducted by the DIA using "remote viewers" ("psychics"), who he claims demonstrated the ability to "see," and thus pinpoint, the location of submerged Soviet and U.S. submarines. When the DIA learned of the extraordinary UFO incident, Blum claims, it brought in three psychics to "see" retroactively what the object looked like when it penetrated the electronic fence 48 hours earlier.

All three of the psychics drew sketches of "rounded, wingless aircraft," Blum tells his readers. Armed with these sketches of flying saucers, Army Colonel Harold E. Phillips, a DIA intelligence analyst with a long-time interest in UFOs, according to Blum, managed to convince his agency that "the time had at last come to convene a top-secret working group to investigate the possibility that extraterrestrials were making contact with this planet."

Although Blum claims to have talked briefly with Colonel Phillips by telephone, the only officer with that name who shows up in Army records is a lieutenant colonel who retired three years before the purported UFO group was formed. Pentagon telephone directories for 1987-88 show an "H. E. Phillips," but he is a Navy commander, not an Army colonel. To avoid any possibility of Pentagon "disinformation," I checked the University of Southern Illinois, in Carbondale, where Blum says Phillips graduated with a degree in engineering. The university could not find any record of a Harold E. Phillips.

According to Blum, the most vexing problem that confronted Phillips as chief of the UFO Working Group was to find a "highly promising" UFO report for the panel to investigate. Blum writes: "For a time, the colonel was convinced he had found his investigative target in Gulf Breeze, Florida. The sightings in this southern town were shared by a variety of witnesses, and there was even a blurred film of what many responsible observers swore was a UFO. It turned out the Air Force was testing a classified low-flying plane in the area."

This explanation is seriously flawed. The object that appeared on Ed Walters's Polaroid prints was a saucer-shaped object with illuminated portholes—hardly an appropriate design for a "low-flying surveillance plane." This explanation also is ruled out if one accepts Walters's claim that he saw four-foot high creatures being "beamed down" from the UFO.

There was a slight blurring of the background in a few of Walters's photos, due to camera motion during the one-second time-exposure used for the night photos, but the image of the UFO *was not blurred.* This logically prompted even some long-time "UFO-believers" to conclude that the photos were hoaxed double exposures made with a small model. Recently, a small model flying saucer similar to the UFO in the Walters photos was discovered hidden in the attic of the house in which he lived when he took his UFO photos.

Next, according to Blum, Colonel Phillips's interest focused on reports of night sightings of a giant UFO reported by many observers in Hudson Valley communities north of New York City. "But then, just when Colonel Phillips was on the verge of recommending that the Working Group dispatch a photographic team" to the area, according to Blum, he received a newspaper report that the giant UFO was nothing more than a small group of small-aircraft pilots engaged in a prank. The hoax had been featured in the November 1984 issue of *Discover* magazine—more than three years earlier.

Phillips finally discovers a "perfect candidate" for the UFO Working Group to investigate: Elmwood, a small town in central Wisconsin. Elmwood's citizens often report seeing UFOs, and its mayor had announced plans to build a $50-million UFO landing site. Blum claims that Phillips sent two covert agents to Elmwood, which prompted Blum's own visit. He arrived in time for Elmwood's annual "UFO Days" festival and devotes about one-sixth of his book to his interviews with local citizens.

Eventually Colonel Phillips learns of the "Top Secret MJ-12 papers," made public by three UFOlogists in the spring of 1987, which claim that the U.S. government recovered a crashed saucer and several alien bodies some 40 years earlier. If the MJ-12 claims were true, clearly somebody forgot to brief top DIA officials who had approved the creation of the new UFO Working Group. Blum provides an evenhanded pro/con treatment, indicating he himself is unsure whether the papers are authentic.

I appear in Blum's book as the person whose research indicates that the MJ-12 papers are counterfeit. Blum offers a not-unflattering summary of my career as a technical journalist and skeptical UFO-investigator. I was rather surprised at his reference to my "jaunty, pencil-thin figure," because we have never met and I have been 10 pounds overweight for 30 years. (We did talk by telephone on several occasions.) I counted 24 other factual errors in the five pages in which Blum highlights my career.

During my January 20, 1989, telephone conversation with Blum, he admitted: "All I have now is a nice, weird story, and you can poke a thousand holes in it." That aptly summarizes the tale he tells in *Out There,* which could more accurately be titled "Spaced Out."

A veteran aerospace journalist in Washington, D.C., Philip J. Klass is also the author of UFO Abductions: A Dangerous Game, UFOs: The Public Deceived, *and other books critically examining UFO claims. This review first appeared in the* Los Angeles Times.

Physics, Psychics, And a Hidden Agenda

Physics and Psychics: The Search for a World Beyond the Senses. By Victor J. Stenger. Prometheus Books, Buffalo, N.Y., 1990. 323 pp. Cloth, $22.95.

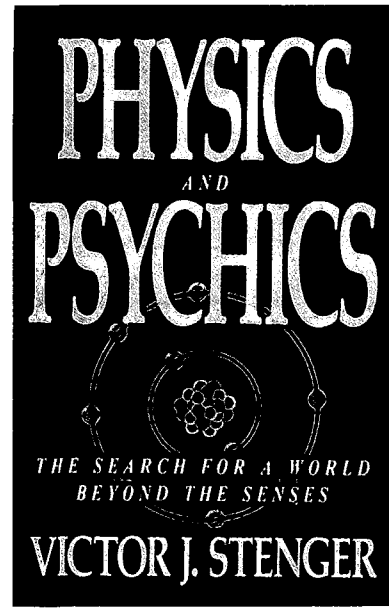
STEVEN HOFFMASTER

One seldom sees a book as uneven as Victor Stenger's *Physics and Psychics.* Parts of it provide unique insights into the natural world. And other parts can most charitably be called biased diatribes.

I had very much looked forward to reading this book. I enjoyed Milton A. Rothman's *A Physicist's Guide to Skepticism* and thought his use of physical principles to analyze psychic claims was quite clear. After all, there is just too much unquestioned acceptance of silly paranormal claims. Another book, with a different perspective, looking at a scientific appraisal of the pseudoscientific couldn't hurt. Or could it?

My problems start with the title. The book is indeed about physics and psychics. It also makes frequent reference to the history and philosophy of science and to religion (in just over 300 pages). All of those topics have been covered in far longer treatises, which are themselves superficial.

It is no surprise that what the author does best is the physics. As a particle physicist he constantly uses the standard model as an example to "prove" his many claims. Much of his presentation of the standard model appears in Chapter 2. This presentation, of course, is correct. But it is not particularly well motivated, nor does it do much to portray the excitement of the field in particular, or of science in general. It can be argued that



Stenger introduced it only to use as a background against which to judge psychic claims. If so, it is one-sided and selectively presented to prove points that are not as universally clear as Stenger might portray them.

For instance, in particle physics there are now three different neutrinos (plus three anti-neutrinos), three other leptons (plus three corresponding anti-leptons), six proposed quarks (and, yes, six anti-quarks), eight gluons, a photon, perhaps a graviton, W and Z bosons, and . . . Well you get the picture. Yes the system works better than any other option we now have (with at least 25 fundamental

particles and more anti-particles). How simple a system is this? Occam's Razor has a few dents in it. And I have not even mentioned Squarks, Sleptons, and Photinos.

By far the best section in this book is Chapter 10, "The Spooks of Quantum Mechanics." In it one finds an excellent summary of the most widely accepted interpretation of quantum mechanics, the experimental verifications of Bell's Inequality, and its very serious challenge to what we would call macroscopic reality. In particular, in this chapter there is a fair consideration given to other reasoned interpretations of QM theories. The author clearly shows that the arguments often heard from paranormalists about the connections between psychic communication and quantum mechanics are based on what Michael Radner and Daisie Radner call "spurious similarity." The current interpretation of quantum mechanics is not consistent with superluminal paranormal claims.

There is some interesting speculation on intelligence and evolution in Chapter 13, "Emergence." And, in general, where Stenger is writing about physical science, the presentations are clear, concise, and relevant, However, the further he gets from physics, the weaker and less convincing his arguments become.

While attempting to explain how one goes from the microscopic world of quantum mechanics and the standard model to that of the macroscopic world of our everyday experience, Stenger correctly points out that as of now we cannot always clearly draw direct scientific links from one to the other. In an attempt to avoid resorting to anything sounding even remotely mystical, he claims that much of our now counterproductive behavior, both religious and secular, can be explained by assuming that our genes have been programmed (pp. 13, 29, 301) to make it so. (Sounds sort of Lysenko-ish, doesn't it?) Further, he argues, all this is consistent with the standard model and materialism. This may be correct, but it seems to me that there is little hard data for such a conclusion.

His selections from the history and philosophy of science often misrepresent the works from which they are drawn. One quickly learns that there is no uniquely correct interpretation in these fields as there is in physics. There are many pathways to go from the initial development of an idea to its final culmination. This is an idea often lost on those who are closely involved in physics and who have lived in a world of correct and incorrect theories. To cite a few examples; Thomas Kuhn (p. 62) was in a Ph.D. program in physics; Maxwell spent a great deal of his time trying to evolve a functioning mechanical ether to explain how his electromagnetic waves traveled through "empty" space (p. 258); and to group Stephen Hawking with Fritjof Capra (p. 268) in discussing "their" theories of the universe is patently unfair. Finally, Stenger's use of the term *anomaly* is often itself an anomaly.

When *Physics and Psychics* deals with psychics it does so on a fairly superficial level. Although most of Chapters 5 through 9 are a discussion and analysis of psychic claims, seldom is any particular claim given more than three or four paragraphs. And much of that is drawn directly from other sources where there is a much better presentation of the material. On the other hand, perhaps only the general background material is needed to show that the case for psychic phenomena is weak. To Stenger's credit, each chapter has an extensive listing of references for the reader who wishes to pursue a particular topic.

However, it seems to me that fewer topics, covered in more detail, would have allowed the author to more ably demonstrate his contentions about psychic research.

All of the concerns above are relatively minor when compared to the not-so-hidden agenda of the author: to show that all religion is unnecessary. People have been discussing religion for centuries. The materialism versus religion arguments have been made over and over again. The fact that they are still being made would seem to indicate neither side has an overwhelmingly convincing case. To paraphrase Stenger: because the standard model does not require a spiritual existence, and there is no material indication of anything spiritual, Occam's Razor forces us to conclude that there is no God. He then proceeds to link all psychic proponents with all types of religion and to claim that there is no material evidence for any of them and hence they should be jettisoned as unneeded human relics of a less objective era.

In a time when it is difficult to get students interested in science, such arguments are clearly counterproductive. To say that science and religion are inherent antagonists seems a bit of an overstatement. And to group everyone who believes in God as members of one grand category who we could better do without is just wrong. I have known too many fine people who were both deeply religious and superior physicists to have any real sympathy for this argument. (I have also known quite a few materialists who were just plain jerks.)

If Stenger's intentions were to favorably present the case against psychic phenomena and to promote the materialist view of nature, he would have been more effective leaving out the religious polemic and allowing the readers to reach their own conclusions.

Steven Hoffmaster is a professor of physics at Gonzaga University, Spokane, Washington.

Exploring, and Solving, Supernatural Mysteries

Secrets of the Supernatural. By Joe Nickell with John F. Fischer. Prometheus Books, Buffalo, N.Y., 1988. 200 pp. Cloth, $19.95.

ROBERT A. BAKER

Readers unfamilar with the work of Joe Nickell, a CSICOP Fellow and one of the nation's premier skeptical investigators, can quickly overcome this deficiency by reading *Secrets of the Supernatural*, a collection of ten occult mysteries Nickell has investigated and solved over the past decade.

Best known perhaps for his *Inquest on the Shroud of Turin* and his accurate prediction of the shroud's age, Nickell also turned his considerable Sherlockian skills to the reputed ghost in

Toronto's MacKenzie house, the riddle of the Crystal Skull, so-called spirit pictures produced by "spirit guides," the mysterious disappearance of Oliver Larch (or Lerch) who supposedly "walked off the face of the earth," a fascinating case of identical twins known as "the two Will Wests," a group of psychic prospectors "witching" for hidden gold, and the case of some mysteriously moving coffins in a vault on the island of Barbados. In collaboration with John F. Fischer, a forensic analyst in Orlando, Florida, Nickell also looked into an alleged "bleeding door" in an eastern Kentucky farmhouse, the miraculous image of the Virgin Mary in a church at Guadalupe, and a number of cases of "spontaneous human combustion."

Each of the ten cases in *Secrets* reads like a well-crafted detective story, and the reader derives the same sort of satisfaction here that comes from any mystery's resolution. Although the ten cases represent only a small sample of the literally hundreds of supernatural claims, they are clearly representative enough to show what happens when such paranormal conundrums are subjected to careful scientific scrutiny. Without exception, they surrender their mystery to the probings of the investigators and turn out to have simple, natural explanations after all.

In both his Introduction and an Afterword, Nickell provides some useful words of advice for all would-be explorers of the occult jungle. First he cautions against excessive credulity: "While we should be open to 'new' ideas, we should not wish to become quite as open as, say, a refuse can." Nor, conversely, should we be so closed-minded that we reject, out-of-hand and beforehand, the phenomena we purport to study. This is the attitude of the "debunker" and one that Nickell—a former private investigator and professional magician—goes to extreme lengths to avoid. The true investigator, in his view, is as bias-free as possible and functions between the two extremes. In his words, "To him, or her, mysterious phenomena are not to be uncritically heralded as proof of transcendent realms, neither are they annoyances to be dismissed or debunked at all costs. Instead, to the investigator, mysteries are to be *solved.*"

This sort of objectivity is the hallmark of all scholarly and scientific inquiry, and Nickell's work should be studied closely and carefully by all students and researchers planning investigations of their own. Finally, Nickell is wise enough to warn readers against "extrapolating too much from the few examples herein. They do not represent proof against all 'supernatural' occurrences. . . . The unique nature of some of the solutions urges that we investigate mysteries on a case-by-case basis." Like all first-rate investigators, Nickell in these various cases employs a wide range of methods and techniques: microchemical analyses, witness interviews, controlled experiments, site inspections, historical research, physical measures, folklorist and iconographic studies, instrumental analyses, specialists and experts—whatever is necessary or required to get the job done.

Many alleged scientists feel the investigation of unusual or preternatural phenomena like those reported in this book is unworthy of their concern. If we are to win the battle for the public mind, however, such an attitude must be rejected. As Nickell notes, "So profound are the implications of these popularly perceived experiences, that the question is not *whether* such phenomena will be investigated but *how.*" With researchers like Nickell and Fischer on the prowl

the proponents of paranormal marvels are, admittedly, nervous. Poor supernature has fewer secrets to protect. But don't despair, ordinary Nature has an endless supply!

Robert A. Baker is professor emeritus of psychology at the University of Kentucky, Lexington, and the author of What Is Hypnosis? *recently published by Prometheus Books.*

Therapists' Dubious Roles With 'Abductees'

Encounters: A Psychologist Reveals Case Studies of Abductions by Extraterrestrials. By Edith Fiore, Ph.D. Doubleday, New York, 1989, 342 pp. Cloth, $17.95.

J. R. COREY

You may have been abducted by aliens and not know it! According to California clinical psychologist Edith Fiore, some of the ten most common signs of alien abduction include: "inability to account for periods of time," "waking up with unusual body sensations," and "appearance of mysterious marks on the body." Sounds like common occurrences for Uncle Ferd, who was frequently abducted by Jack Daniels or Jim Beam.

This author appears to be serious, however. Since discovering under hypnosis that she had once beamed up to a UFO, Fiore has found that many of her patients have had similar experiences, sometimes with traumatic results. *Encounters* gives the case histories of 13 of these people. The therapeutic technique Fiore uses with them is called "hypnotic age-regression," which she says "gets to the cause of symptoms and problems of all sorts and results in immediate and lasting cures" (p. xvi). This statement rests on two dubious assumptions: first, that "hypnotic age-regression" enhances memory for events "buried in the subconscious mind" and, second, the Freudian dogma that discovering causes of some psychological or behavioral disorder ensures a cure for it.

The "subconscious mind" is not a scientifically valuable or falsifiable concept. There is no proof that you or I have—or don't have—a "subconscious." All we know is that some memories are difficult to recall. There is no evidence, beyond anecdotal, that retrieving certain memories relating to the causes of our problems relieves those problems. There is no evidence that "hypnosis," let alone "hypnotic age-regression," can facilitate memory. The forensic use of hypnosis in enhancing eyewitness testimony has been severely criticized (Wagstaff 1989), and laboratory studies have found that "hypnotized" witnesses may make more errors than control subjects. Sanders and Simmons (1983) reported showing a videotape portraying a crime to 100 college students. One week later the subjects were asked to identify the criminal in a videotaped police lineup. Half of the

subjects were hypnotized and the control subjects were not. The control subjects made more correct identifications and answered more questions about the incident correctly than the hypnotized subjects. "Hypnotized" people may be more suggestible, but less accurate.

Fiore's patients were told about her belief in extraterrestrial abductions and the fact that she was writing a book about such incidents before they were "hypnotized." Being informed that the therapist herself had been abducted and being aware of the extensive supermarket-tabloid literature on the subject could further prime the patients' fantasies. And fertile fantasies they are. The aliens apparently are intensely curious about human anatomy, especially the naughty parts. They remove one woman's ova, probe various orifices of others with strange instruments right out of Bones's medical bag, and operate on one person's brain without leaving a scar. There is a powerful inducement to fantasize these things and end up as a case in the therapist's book (soon to be a movie?). Furthermore, some of these people (or people with identical stories) have ended up on various television talk-shows—further fame and attention for producing a good fantasy.

Fiore is not alone. She lists 26 other alienists at the end of the book. These people are said to be hypnotherapists who work with abductees or contactees. I had seen one of them. She appeared on the Morton Downey, Jr., show and "hypnotically regressed" the host, who reported seeing a UFO. The hypnotherapist stated on the show that Downey was indeed hypnotized and had recalled a real incident of UFO contact. Downey then announced to the audience, which included some members of the New York Area Skeptics, that he had faked the whole thing.

So why am I writing this review and preaching to the converted? Because I am concerned about the profession and practice of psychology. It's bad enough that there is an abundance of nonempirical (and anti-empirical) therapeutic methods abounding in psychotherapy. This is a situation similar to that of medicine a century ago, when untested cures like bloodletting caused iatrogenic illness. In the present case, if these people were not actually abducted, are therapists like Fiore and the 26 others listed in the back of her book actually causing, rather than treating, psychological problems?

References

Sanders, G. S., and W. L. Simmons. 1983. Use of hypnosis to enhance eyewitness testimony: Does it work? *Journal of Applied Psychology*, 68:70-77.

Wagstaff, G. F. 1989. Forensic aspects of hypnosis. In *Hypnosis: The Cognitive-Behavioral Perspective*, 340-357, ed. by N. P. Spanos and J. F. Chaves (Buffalo, N.Y.: Prometheus Books).

J. R. Corey is a professor of psychology at the C. W. Post Campus of Long Island University, Brookville, N.Y.

Fun-Filled Reading for Young, Inquisitive Minds

The Magic Detectives: Join Them in Solving Strange Mysteries. By Joe Nickell. Prometheus Books, Buffalo, N.Y., 1989. 115 pp. Paper, $7.95.

The Magic World of The Amazing Randi. By James ("The Amazing") Randi. Bob Adams, Inc., Holbrook, Mass. 120 pp. Paper, $9.95

ROBERT A. BAKER

Written for young folks in the ten to teen-years age group, Joe Nickell's *Magic Detectives* is a splendid vehicle for awakening interest in both the world of the paranormal and the skeptic's efforts to provide scientific explanations of unreasonable claims. In a delightful and entertaining manner Nickell gives the young reader a mystery with several clues to its solution. Once the hook is set he then asks the reader to think up a reasonable, common-sense solution. Successful or not, by then turning the book upside-down the solution or explanation is provided. Clearly written and also cleverly illustrated by the author, the book provides 30 of the most popular and well known occult classics set in a mystery format. Included are such legends as the Amityville Horror, firewalking, the Geller effect, the Bermuda Triangle, the Shroud of Turin, haunted houses, ghosts, talking horses, fairies, spirit pictures, Bigfoot, ancient astronauts, faith healers, Bridey Murphy, and spontaneous human combustion.

Although written for youngsters, adults will find that the stories have the same appeal as potato chips or peanuts—after the first sample you won't stop until you shamefully find yourself reading "A Note to the Teacher" at the end of the book.

Each of the 30 mysteries captivates and engages the reader and in each story at least one or two clues are carefully embedded in the text. The subsequent solutions are simple, clear, and enlightening. Nickell is also careful to avoid the error many authors make in "writing down" to their audience and totally destroying all youthful credibility. No one wants to be talked to or treated "like a child."

The book makes a perfect present for any skeptic's son or daughter, niece or nephew, grandchild, or any other ten-year-old or teen you know. As a text for use in the classroom it will serve as an admirable antidote to the paranormal propaganda pestering us at every turn. A note to teachers and a list of references are also provided.

Although James Randi's skeptical angle is more oblique, he is equally successful in his efforts to awaken young people's interest in the art of magic and the professional magician. Randi's *Magic World* consists of 24 clever and carefully selected magic tricks offered by young or young-at-heart professional magicians from all over the globe. Represented are Jocquin Ayala from Mexico, Alan Nguyin from Vietnam, as well as artists from Italy, the USSR, Canada, Switzerland, France, Jamaica, Ireland, Puerto Rico, and South Africa, plus 13 well and less well known professional

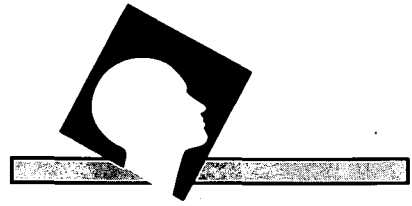
"Walking on Fire," from *The Magic Detectives.*

conjurors from the United States. The latter include Harry Blackstone, Nathan Burton, David Copperfield, Goldfinger and Dove, Penn and Teller, Robert Steiner, and Randi himself. Randi's format consists of brief biographies of the magicians, a concise presentation of the artist's favorite trick and how to perform it, and some general principles of successful stage presence and presentation given in a final section. Also provided is a list of props required for the tricks, a glossary of magic terms, addresses of dealers in magic supplies, and the names and addresses of magic societies and professional publications.

The tricks and deceptions of conjuring skill consist of successful predictions; ESP and mind-reading illusions; card tricks, coin tricks, tricks with handkerchiefs and napkins; tricks with string, shoelaces, magazines, rubber bands, pencils, a glass, and even the book itself, which contains a picture of a black hole. Most can be carried out by the average youngster with relative ease and a minimum amount of practice, using ordinary, easily obtained household items.

Every skeptic who has ever addressed a young audience has stressed the importance of learning magic if one plans to become a serious investigator of the paranormal. Randi's *Magic World* provides an entertaining introduction to magic as either a vocation or avocation, and his choice of performers to emulate should be inspirational. It is a neat educational package. The same can also be said about Nickell's primer for skeptics. Together the two books provide a complementary and fun-filled trip for young inquisitive minds. They also set a splendid example for other skeptics to follow when they sit down in front of their word processors. Well-crafted books in the skeptical vein for young readers are few and far between, and the truth in the aphorism "As the twig is bent, so grows the tree" still holds. More power to writers like Nickell and Randi. ■

Some Recent Books



Cold Fusion Research: A Report of the Energy Research Advisory Board. U.S. Energy Research Advisory Board. National Technical Information Service, Springfield, Va., 1989. $17.00 (fiche: $8.00). In April 1989 the Secretary of Energy ordered his advisory board to examine the cold-fusion experiments that professors Pons and Fleischmann had announced and which others were attempting to duplicate. The Board's study, completed in November 1989, concludes that the phenomenon appears to be neither a nuclear process nor a potential form of usable energy. They recommend against special funding but are "sympathetic toward modest support for carefully focused and cooperative experiments. . . ." There is a lengthy bibliography.—*Robert Lopresti*

Critical Thinking in Clinical Practice. Eileen Gambrill. Jossey-Bass Publishers, San Francisco, 1990. 432 pp. Index. $29.95, cloth. The author shows how cultivation of critical-thinking skills by psychologists, psychiatrists, social workers, and counselors can help them make more accurate decisions about their clients and so provide better service. She notes that surprisingly little attention is devoted in professional training to sources of error that can lead clinicians astray. Examples of common errors she has encountered include being over-reliant on small, biased samples, not recognizing pseudoexplanations, and having a false sense of accuracy about predicting future events. Chapters deal with such topics as reasoning, persuasion strategies, fallacies, influences on data collection, and overcoming obstacles to critical thinking.

Evolution and the Myth of Creationism. Tim M. Berra. Stanford University Press, Stanford, Calif., 1990. 198 pp. Index. $7.95, paper; $29.50, cloth. Zoologist provides a basic guide to the facts in the evolution debate. Written for the open-minded reader who would like to better understand the technical issues of evolution but is confused by the political/educational controversies swirling about the subject. Basically a brief elaboration of the evidence for evolution, but doesn't pull any punches in its criticism of creationists.

Facts, Fallacies, and Frauds in Psychology. Andrew M. Colman. Hutchinson, London, 1990. 225 pp. Index. Critical examination of many subjects of popular interest. Topics include anorexia, body image, bulimia, ESP, hypnosis, intelligence, nature-nurture, obedience, race, and twins.

Philosophy of Science and the Occult, 2nd ed. Edited by Patrick Grim. State University of New York Press, Albany, N.Y., 1990. 395 pp. Index. $10.95, paper. Introduces the philosophy of science through examination of the occult and examines the occult rigorously enough to raise central issues in the philosophy of science. Presents divergent views on astrology, parapsychology, and quantum mechanics mysticism to emphasize topics standard to the philosophy of science. Authors represented include Paul

Feyerabend, Michel Gauquelin, Ivan Kelly, G. A. Dean, Clark Glymour, Karl Popper, Thomas Kuhn, Antony Flew, Fritjof Capra, Robert P. Crease, and N. David Mermin.

Relativism Refuted: A Critique of Contemporary Epistemological Relativism. Harvey Siegel. D. Reidel Publishing Co., Dordrecht, 1987. 210 pp. $64.00, cloth. Useful critique of epistemological relativism, a viewpoint scientists and other skeptics increasingly encounter in arguing issues of the paranormal with other scholars.

Scientific Fraud: Hearings. U.S. Congress, House of Representatives, Committee on Energy and Commerce, Subcommittee on Oversight and Investigations. Government Printing Office. Washington, D.C., 1989. In 1989 Congress investigated claims that research done with federal money and reported in the journal *Cell* had been partly fabricated. The case is not directly related to the paranormal, but witnesses discuss such issues as scientific responsibility, the professional ethics involved in conducting and reporting experiments, the fate of whistle-blowers, and the advisability of Congress getting involved in such matters.—*Robert Lopresti*

They Call It Hypnosis. Robert A. Baker. Prometheus Books, Buffalo, N.Y., 1990. 313 pp. Index. $21.95, cloth. Psychologist provides valuable examination into one of the most interesting and misunderstood subjects about human mind and behavior. Discusses popular misconceptions about hypnosis; recent and contemporary views; what hypnosis is, is not, and what it does and doesn't do; hypnosis and pain; and abuses and misuses of hypnosis. Baker attempts to bring together "a large body of experimental, empirical, and practical evidence that has been accumulated over the past 20 years that is beginning to clear up the confusion and misunderstanding surrounding the concept of hypnosis and 'hypnotic mystery.' " The analysis adds to the demise of the belief in a special state called "hypnosis." Instead it is more a communication between an authority figure calling himself or herself a hypnotist and a second person complying with the requests and suggestions of the first.

Wings of Illusion: The Origin, Nature and Future of Paranormal Belief. John F. Schumaker. Prometheus Books, Buffalo, N.Y., 1990. 183 pp. Index. $19.95, cloth. Clinical psychologist writes of the human appetite for illusion and reality-defying belief, a phenomenon he calls "the paranormal belief imperative." An inquiry into why paranormal beliefs are so common, what functions they serve, and what price we pay for adhering to them.

—*Kendrick Frazier*

The SKEPTICAL INQUIRER Available to the Blind

Because of many requests from the blind and those with impaired vision, the SKEPTICAL INQUIRER is listed with the Associated Services for the Blind. This magazine is available on special 4-track recordings, or by request in braille or on cassette. For more information, contact Fred Noesner, Recorded Periodicals, ASB, 919 Walnut St., Philadelphia, PA 19107, or telephone 215-627-0600.

Articles Of Note

Bullard, Thomas E. "UFO Abduction Reports: The Supernatural Kidnap Narrative Returns in Technological Guise." *Journal of American Folklore,* 102(404):147-170, April/June 1989. Bullard analyzes UFO-abduction stories as folktales, delineating their structure, common elements, and themes. He compares them to the kidnappings that appear in tales of fairies, demons, etc.

Crosariol, Beppi. "Cold Fusion and the Media." *Queen's Quarterly,* 96(4):815-822, 1989. A report on the popular media's reaction to claims of cold fusion. It concludes that the unconventional methods used to announce the claims raised false hopes, but also resulted in faster scrutiny of the claims.

Davidson, Keay. "When Worlds Collide." *San Francisco Examiner,* August 29, 1990, B1. Reporter's excellent critical investigation into Howard Blum's *Out There,* the latest UFO-conspiracy exploitation book. Davidson called a number of Blum's sources and found many repudiations of statements attributed to them; in other cases, no such person could be found. "I have not only been misquoted, but misquoted terribly," a former White House official mentioned in the book told Davidson. Davidson quotes *New York Times* investigative journalist Seymour Hersh (also mentioned): "I resent a former colleague of mine . . . writing a book in which he drops my name in an effort, I think, to lend credence to what I believe are nutty theories."

Dawson, Michael E. "Where Does the Truth Lie? A Review of *The Polygraph Test: Lies, Truth, and Science.*" *Psychophysiology,* 27(1):120-121, 1990. Review of a study by a science board of the British Psychological Society that is highly critical of polygraph testing.

Evans, William A., et al. "Science in the Prestige and National Tabloid Presses." *Social Science Quarterly,* 71(1):105-117, March 1990. The coverage of science in the *New York Times* and the *Philadelphia Inquirer* is compared with that in the *National Enquirer* and *The Star.* The two types of papers offer similar proportions of science news, but differ in the comprehensiveness and authority of their coverage. The author suggests that both types minimize the process of science by reporting results in "bits and pieces."

Fish, Lydia M. "General Edward G. Lansdale and the Folksongs of Americans in the Vietnam War." *Journal of American Folklore,* 102(406):390-411, October-December 1989. Lansdale was a top American intelligence officer. The main subject of this article is his collection of folksongs from the Vietnam war, but there is a fascinating description of his use of local superstitions as weapons of psychological warfare: specifically, vampire legends in the Philippines and astrology in Vietnam.

Fisher, Arthur. "Much Ado About. . . ." *Mosaic* (National Science Foundation), 21(2):12-23, Summer 1990. A

good, clear, balanced history of the cold-fusion controversy.

Kelly, Ivan W., Roger Culver, and Peter J. Loptson. "Astrology and Science: An Examination of the Evidence." In *Cosmic Perspectives*, 207-231, ed. by S. K. Biswas, D. C. V. Mallik, and C. V. Vishveshwara, Cambridge University Press, New York, 1989. Detailed scientific critique of astrology.

Lievrouw, Leah A. "Communication and the Social Representation of Scientific Knowledge." *Studies in Mass Communications*, 7(1):1-9, March 1990. The article outlines the process by which scientific theories are made available to the general public and the reasons that some ideas are easier to popularize than others. Cold fusion is used as an example.

MacIntosh, J. J. "Reincarnation and Relativized Identity." *Religious Studies*, 25:153-165, June 1989. Critique of reincarnation by Canadian philosopher who argues it is logically impossible. A difficult article, heavy going with modal logic.

Marshall, Eliot. "Science Beyond the Pale." *Science*, 249:14-16, July 6, 1990. Inquiry into dealing with maverick, unorthodox ideas within the scientific community, with special reference to "heretical" views of astronomer Halton C. Arp (opposing the standard model of redshift theory) and physicist Hannes Alfven (about space plasmas). What is the proper balance of public funding between "mainline" scientific ideas and "unconventional" ideas that virtually all other scientists feel are untenable? Looks at both sides of the issue and points out that while federal funding of science generally does avoid "maverick" proposals ("most screwy ideas just turn out to be screwy ideas," says Robert Park of the American Physical Society), it nevertheless does support daring, expensive, and controversial studies, such as the $192-million LIGO gravity-wave observatory. The situation is complicated in astronomy by an extreme shortage of telescopes and observing time. Another issue is the tendency of funding agencies to support projects that promise "dazzling and spectacular" results to the neglect of more mundane-*sounding* subjects, such as ceramics and solid-state physics, that may be more important. Meanwhile the National Science Foundation does have a new program of "small grants for exploratory research," although it is intended to get fresh, new researchers started, not help mature ones fight their scientific enemies. See also, Rolf M. Sinclair's interesting follow-up letter, *Science* 249:972, August 31, 1990, lamenting and rebutting Marshall's "overused literary scenario of the unappreciated maverick versus the closed-minded establishment." States Sinclair: "Any discussion of an 'uphill battle for acceptance' should include such counterexamples as relativity, quantum mechanics, DNA, and the quark model, all of which gained acceptance as fast as word got around. The question could better be phrased, What are the dynamics that make some ideas take months and others take decades to find their equilibria?"

Masek, Bruce. "Biofeedback." *Harvard Medical School Health Letter*, 15(10):1-4, August 1990. Explains how biofeedback works, when it's effective, and what it isn't particularly good for.

Murphy, Cullen. "The Way the World Ends." *Wilson Quarterly*, 14(1):50-55, Winter 1990. A cheerful overview of the current eschatology boom, comparing recent theories on the world's

demise with earlier panics, such as the events of the year 999. Cullen suggests that the popular "end of history" theory and related ideas may be part of this end-of-millennium fever.

Nathan, Debbie. "What McMartin Started: The Ritual Sex Abuse Hoax." *Village Voice*, June 12, 1990, pp. 36-44. Probing investigation into the latest round of Satan scares, beginning with the McMartin day-care case. Places these ritual sex-abuse scares into the context of "moral panics" like the Salem witch trials and McCarthyism. " 'Ritual abuse' is today's mythic expression of deep-seated worries over sweeping changes in the family." In this case "many feminists and progressives have bought into the hysteria, too." These fears have been reinforced by "another strand of irrationality—the rise of paranoia about Satanism, in which religious belief in child-torturing conspiracies by devil worshipers has resurged in the U.S." and gained acceptance via tabloid television. Psychologists, social workers, and prosecutors have joined parents in a subculture of "tent-revival beliefs in their children's imagined victimization" and "abuses of a child-protection movement gone mad," which the author says is wreaking harm on civil liberties, the accused, day-care, women's rights, and children.

Taubes, Gary. "Cold Fusion Conundrum at Texas A&M." *Science*, 248:1299-1304, June 15, 1990. Investigative report that is first to raise the question of possible fraud (a suggestion of spiking of test cells with tritium) in certain cold-fusion experiments at Texas A&M that had positive results. The case is not yet resolved.

—Kendrick Frazier and Robert Lopresti

WHY THERE ARE NO PARANORMAL BUSINESSES IN THE WORLD.

THE VOICE OF INQUIRY
A Radio Magazine

Because CSICOP has received an increasing amount of mail expressing distress at the lack of skeptical perspectives in radio and television programs, we have begun to participate in a new venture called the "Center for Inquiry." The Center for Inquiry will be a media production facility designed to develop and produce radio, television, and videotape programming that promotes skepticism, critical thinking, and the scientific method.

Now there are seven installments of "The Voice of Inquiry," the radio magazine program co-sponsored by CSICOP. Purchase your own Voice of Inquiry tapes and listen at your convenience. All programs are a half-hour long (Dolby stereo cassette).

$6.95 each 3 for $18.00 All 7 for $41.00

☐ **103A.** "Satanism in America": Shawn Carlson, Gary O'Sullivan, Phillips Stevens, Robert Hicks • "Critical Thinking": Steve Allen, Paul MacCready • "Spontaenous Human Combustion": Joe Nickell • "African-Americans and Humanism."

☐ **103B.** "Does the Full Moon Affect Human Behavior?" Ivan Kelly, James Rotton, Roger Culver, Nick Sanduleak • "Sex in the 1990s" • "What Secular Humanism Is and Isn't" • Secular Organizations for Sobriety."

☐ **103C.** "Out-of-Body and Near-Death Experiences": Susan Blackmore • "The Search for Extraterrestrial Intelligence," Thomas McDonough • "The Logic and Virtue of Skepticism": Ray Hyman • "Euthanasia."

☐ **104A.** ALL CSICOP PROGRAM "CSICOP 1990 Conference Report": James Randi, Penn Jillette, Paul Kurtz, Barry Karr, Bill Nye the "Science Guy," and others. • "Why We Believe the Incredible": James Alcock, Ray Hyman • "Hands-On Skepticism": Bernard Leikind.

☐ **104B.** "Was Ancient Egypt Black?": Teaching About Religion in Public Schools" • "Global Humanism.

☐ **105A.** "Why Astrology Won't Go Away": Shawn Carlson, Andrew Fraknoi, Paul Kurtz • "Can Reason Alone Make Us Moral?" • "The New Age": Robert Basil, Jay Rosen, Ted Schultz, Brad Steiger.

☐ **105B.** "Magic and Deception": Kendrick Frazier, Henry Gordon, Steve Shaw, Bob Steiner, Jamy Ian Swiss • "Contraception" • "The New Castastrophism": David Morrison, James Oberg.

☐ Check enclosed Grand Total $_____

Name_____

Address_____

City_____ State_____ Zip_____

Mail to: **Center for Inquiry • Box 32 • Central Park Station**
Buffalo, NY 14215-0032

CSICOP NEEDS YOUR HELP

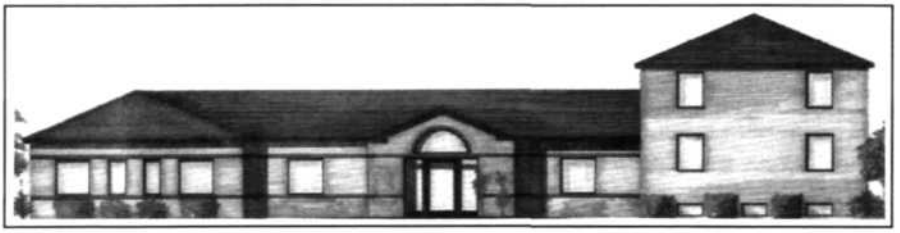
To Complete Its New Headquarters

• • •

Construction has begun on a new building to house CSICOP and the SKEPTICAL INQUIRER.

The Center for Inquiry will be built in two phases on a 1.82-acre site adjacent to the State University of New York at Buffalo (SUNYAB) Amherst Campus, one of North America's largest university campuses. This location offers maximum access to university resources in a setting conducive to productivity and growth. The property, a long, narrow lot with frontage on a major suburban artery, has been acquired using existing funds.

To maximize the impact from each dollar spent, CSICOP is building the Center for Inquiry in collaboration with CODESH, publisher of *Free Inquiry* magazine.



Phase I, now under way, will quickly create about 5,700 square feet of office space. An existing two-story masonry structure is being converted to offices, and a one-story, open-plan wing is being added. Parking will be provided for 24 cars. When Phase I is completed, most administratie functions of CSICOP, including the administrative offices of the SKEPTICAL INQUIRER, will be relocated to the suburban site.

Occupancy is anticipated in the spring of 1991. Total expenditure for site acquisition and Phase I construction is estimated at $420,000. More than half of this amount has been funded internally.

Phase II will fulfill the site's potential and allow all CSICOP operations—including magazine production, mailing, warehousing, and electronic media productions—to be consolidated at the new site. The Phase II building will also house a sizable library and meeting rooms designed to provide near-campus support for meetings, small scholarly conferences, and the seminars of the new Center for Inquiry Institute.

Phase II development will involve construction of an all-new 24,000-square-foot office building whose architectural style will compliment the Phase I building. In all, about 30,000 square feet of office space will be created, filling the projected needs of CSICOP and the SKEPTICAL INQUIRER for years to come. Additional paving and landscaping will complete the site and provide parking for 64 more cars.

Estimated costs for Phase II are approximately $1.5 million. The total budget is a modest $1,920,000.

WE NEED YOUR HELP.

The Center for Inquiry embodies a bold vision of the future. Like all good skeptics, we know that such visions only come true through hard work—and through the generous support of those who share our goals. We urgently ask you to support our Capital Fund Drive.

CSICOP desperately needs room to grow. The need is clear for a consolidated, up-to-date facility in a convenient, academically and scientifically oriented setting.

Your generosity can help us to seize this opportunity. Larger donors will receive special acknowledgment. Donors of $1,000 or more will have their names entered in a commemorative album, which will be available for viewing in the Phase I building. Donors of $5,000 or more will be recognized by the inscription of their names on a permanent plaque in the lobby of the Phase II building.

Please send your donation today. Make your check payable to CSICOP and mail to CSICOP, c/o Center for Inquiry Capital Fund Drive, Box 229, Buffalo, NY 14215-0229. To charge your gift (Visa or MasterCard) call toll free 1-800-634-1610; in New York State, 716-834-3222.

YES, I support skepticism, science and reason! Here's my contribution to the CSICOP/SKEPTICAL INQUIRER Center for Inquiry Capital Fund Drive.

Committee for the Scientific Investigation of Claims of the Paranormal • Box 229, Buffalo NY 14215-0229

Name: _____

Address: _____

City: _____ State: ____ Zip: ____

Amount: ☐ $100 ☐ $500 ☐ $1,000 ☐ $5,000 or more ☐ $Other _____

☐ Check/Money Order ☐ MC ☐ $100 Visa

Credit Card Donors Only

Acct. No. _____ Exp. Date _____ Daytime Phone (____) _____

Signature _____

Forum

College Science Courses: Killing the Germ Of Interest

VINCENT F. SAFUTO

The recent articles by Carl Sagan (1990) and Glenn T. Seaborg (1990) in the SKEPTICAL INQUIRER regarding the sad state of science education in the United States were interesting but theoretical. I agree totally with the conclusions of both articles: We need to teach science better and understand it more. As a student at a local community college, I have had the opportunity to experience firsthand exactly what is wrong with science teaching at the junior-college level and gauge its effect on students.

The poor quality of science instruction at precollegiate levels is evident in the beliefs of students at the college I attend. Astrology is uncritically accepted by some students and many others believe "there must be something to it." As a reporter for the college newspaper, I wrote feature articles on science and was asked to "dumb-down" many stories because even my editors found them incomprehensible. Students were often ignorant of basic scientific principles. My articles on astrology and biorhythms brought forth such comments as "You're causing people to lose hope in the future." A few students told me that they could not understand the need to take six credits of science since they were not majoring in science.

Many of today's young people place more trust in the astrological signs than in real science. In fact, many feel that real science is more pseudoscientific than pseudoscience! It is easier for them to understand the supposed characteristics of a "Virgo" than the physical characteristics of quasar 3C 273 in Virgo. During a "Halley Rally" four years ago, a 16-year-old girl told me about an astronomy class that was offered at a local high school. She registered for it because of her interest in astronomy. Many others registered for it because they thought it was a class in astrology. It didn't matter, though, because the teacher knew nothing about either topic.

Florida's community colleges require students to take six credits in science. These are six of the most dreaded credits in the whole curriculum, according to some students. Having had their interest in science beaten out of them in high school, they are not highly motivated to take any more courses in it. The specific course I took was Earth Science. The way it was presented and its effect on the level of science interest bear close scrutiny.

Although I have no complaints about the topics covered (meteorology, geology, plate tectonics, and astronomy), the way they were presented led many in the class to an even deeper dislike of science. Science was shown to be not a fascinating endeavor of discovery and insight, but a boring listen-to-lectures, take-notes, and a fill-in-the-dots-of-the-multiple-choice-test marathon. All theory and no practical applications makes science very dull.

The teacher was a physics teacher who, I am told, is even more boring in his normal subjects. I found him to be a fascinating person in one-on-one conversations. We had several interests in common and I enjoyed talking with him in his office. He could not transfer that ability to the one-on-forty lectures in the classroom, though. He often wasted time. Out of a 75-minute class, he devoted 10 to 15 minutes to taking attendance. The antiquated movie projector was a challenge to his abilities: once he spent 20 minutes loading a film.

The teaching aids were museum pieces. Although the teacher brought in rock samples from his own collection to emphasize points during the unit on geology, he had little to work with in the other units. The films dated back to the late fifties and early sixties. There were a few videotape presentations, but they were quite dull.

As an amateur astronomer, I eagerly awaited the unit on astronomy and advised my classmates to stay in the class for it. I hoped that, when they were exposed to the wonders of space, my fellow students would better understand the value of science.

Again, we were very much disappointed. There were no tapes or films on astronomy. The teacher spent much time talking about time. Declination and Right Ascension were discussed to death. Sidereal time, solar time, and lunar time had to be understood. At one point, the teacher commented that "the astrological signs are in the zodiac." He would often mention, in passing, all the topics he couldn't talk about: black holes, galaxies, quasars, neutron stars, and so on.

His discussions of the solar system basically reminded students that there were nine planets. He was not aware that Neptune has rings until I

informed him of that fact. He commented that some people thought that crystals could heal, that astrology seemed to have some basis in fact, that the International Star Registry sold stars, and that learning science was mainly learning vocabulary. All without the other side of the argument: crystals have not been proved to heal anything, astrology is statistically invalid and scientifically impossible, the ISR's designations have no authority or validity, and learning science is learning how the universe and nature work.

Talking with my fellow students after the final exam, I found two groups: a vast majority who loathed science because of the course (none science majors) and a tiny minority who loved science in spite of the course (all majoring in science-related fields). From these results, it is obvious that what we need at all levels, including the college level, is a hard look at how science is presented to the non-science major.

We cannot continue to teach science the way it is currently being taught. Interest must be developed if it is not present. The way to do that is not by putting students to sleep in class. Students must "do" science, not just read about it or take notes on it.

The alternative is to create a generation turned off by science or so misinformed that they find real science hard to believe and pseudoscience easily accessible, like "Mr. Buckley" in Carl Sagan's recent article.

References

Sagan, Carl. 1990. Why we need to understand science. SKEPTICAL INQUIRER, 14:263-269.

Seaborg, Glenn T. 1990. The crisis in precollege science and math education. SKEPTICAL INQUIRER, 14:270-275.

Vincent F. Safuto is a free-lance writer, college journalism student, amateur astronomer, and occasional astronomy teacher. He recently taught a course at the South Florida Science Museum titled "Pseudoscience: Nonscience or Nonsense?"

Pseudoscientific Beliefs and the Slaughter of Wild Animals

F. K. DONNELLY

I believe the advocacy of skepticism and rationalism has more immediate social implications than has been otherwise perceived. Too often skeptics are seen as an irrelevant group obsessed with, at worst, the exposure of relatively harmless cranks or, at best, the protection of the gullible public from the wiles of the unscrupulous promoters of pseudoscience. The advocates of paranormal beliefs and pseudosciences are often perceived as harmless entertainers, good "copy" for the media, or amusing eccentrics. It is sometimes difficult to convince even a rational audience of the harm caused by paranormal beliefs, apart from the enormous time wasted by preoccupation with such things as astrology, palmistry, tea-leaf readings, pyramid power, iridology, phrenology, physiognomy, etc.

There is, however, one very important and alarming environmental issue that provides a graphic illustration of the damage caused by pseudoscientific belief structures. I refer to the carnage perpetrated against large wild animals by poachers. Large

horned animals are slaughtered to serve a worldwide market based on the belief that horns or tusks possess medicinal or other powers to enhance sexual performance or promote male prowess. Rhino horns are used in Oriental cultures as a medicine, while ivory from elephants is highly prized in certain parts of the Middle East as handles for daggers. Even the North American black and brown bears are being slaughtered for the supposed medicinal qualities of their various body parts. Conservationists, environmentalists, government agencies, and even the promoters of tourism have warned that many species in Africa and elsewhere are endangered by this horrible and largely illegal traffic.

Environmentalists have sounded the alarm and many governments have tried to stop the assault against such magnificent creatures. Skeptics and rationalists also have their part to play in the preservation of these species. Our role must be a supplementary educational one. We must point out that the belief underlying the whole process is really a form of the notion of "correspondences," whereby superficial similarities between two phenomena are believed to have special significance. Thus the astrologer might link the position of Mars, the red planet, to blood and war and ultimately to a bellicose personality. Likewise in some European folk cultures, red hair is believed to be the mark of a short-tempered person. Similarly the palm reader and iridologist each believe that their particular chosen body part contains decipherable clues to the performance of the whole organism. In the case of the trade in rhino and stag horns we are dealing with an alleged correspondence between human male virility and the hardness of a nonsexual body part of a genetically remote species.

In my view the rationalist initiative in this critical area should be threefold:

1. In our criticism of pseudoscience and paranormal beliefs of various types we should be determined to expose the more fundamental notion of correspondences. This false belief underlies astrology, palmistry, phrenology, physiognomy, and possibly the practice of homeopathy. To the extent that the notion of "correspondences" persists at all, it supports the structure of pseudomedical beliefs that now threaten the very existence of many species of large mammals.

2. We should be prepared to work with responsible cultural and ethnic groups in an educational effort to undermine these traditional yet false and ultimately tragic therapies. In doing so we do not need to assume a stance of cultural superiority in relation to our audience. Skeptics know only too well that the belief in "correspondences" is also deeply rooted in "Western" culture.

3. We should be prepared to work with environmental groups to eliminate the demand for these animal parts through our joint educational efforts.

I trust the SKEPTICAL INQUIRER readership will recognize the urgency of this problem.

F. K. Donnelly is a professor of history at the University of New Brunswick, Saint John, N.B., Canada.

Something for Nothing: A Common Theme in the Paranormal

STEVEN HOFFMASTER

Upon reading Lawrence Jerome's (1989) recent book on crystal power, I had a horrible feeling that I had been there before. It all seemed much too familiar. We are talking serious déjà vu. Words like "energy field," "water purification," "healing power," and "the lost continent of Atlantis" began to bring tiny beads of perspiration to my forehead.

Was this a first for me, a true psychic experience? Or was it something much more mundane? A picosecond's thought took care of that. Having read several books more than a decade ago on pyramid power, and later having lectured on it, I recognized that many of the same claims that were made there are now being made for crystal power.

One of the pyramid power classics, Serge V. King's (1977) *Pyramid Energy Handbook*, claims that the pyramid has mysterious healing powers, can be dangerous in overdoses, and can reenergize the body, relieve emotional distress, and of course improve one's sex life. These can be found in most books of the pyramid genre and are listed in Catherine Bowman's (1987) *Crystal Awareness*. Bowman also points out (repeatedly) that the best place to meditate with crystals is inside a frame pyramid.

If we go further into the past, a nearly similar development can be seen in the work of Wilhelm Reich. Probably the best summary of Reich's work is given in David Boadella's *Wilhelm Reich: The Evolution of His Work* (1973). In this classic we are told of the development of "orgone energy" and its use as a cure for cancer and to alleviate emotional distress. Reich built orgone accumulators—rectangular boxes with sides made out of alternate layers of organic and inorganic materials. Later on, Reich used "orgone energy" in his "cloudbuster" to end droughts and to shoot out stars while fighting evil (melanor) in the universe. Roughly speaking the cloudbuster was a series of parallel metal pipes that could be aimed at the offending party. These pipes were connected to running water by metallic cables that served as conductors for the good energy (orgone) or bad energy (melanor).

We should be thankful for small cosmic miracles, I suppose. During the middle of the pyramidic phase of this phenomenon, several books on Pendulum Power appeared. In Nielsen and Polansky's (1977) *Pendulum Power*, one can find all the claims previously mentioned. In fact the book reads very much like one on pyramids, except now we have pointed objects (sometimes crystals) swinging on strings. This never really caught on. Perhaps there is some sort of exclusivity principle working here. In any case, most of us had our lives considerably altered by the absence of a lot of pendulum drivel.

If we go even further back in time, we see that perpetual-motion efforts (Ord-Hume 1977) have a lot in common with pyramids/crystals. All promise a relatively large output (fairly easily) for a correspondingly small input. Many of today's rabid environmentalists show some of the same traits as they argue (vehemently, of course) for the maintenance of a pristine earth while keeping current standards of living. Apparently they are unaware of the inherent trade-offs

present in the use of energy.

Clearly there is some human need that is being served by all this. Otherwise it would not keep reappearing in only slightly disguised forms. Typically life is not uniformly pleasant. Most of us have some rather bad times. And most of us either ride them out or work through them. Wouldn't it be nice if these troubles would just go away? Wouldn't it be nice if Mother or Father or pyramids or crystals would solve our problems for us? It is so terribly difficult and unpleasant trying to solve them ourselves. In fact some appear to be so complex that the solutions are not at all obvious.

It is often difficult to accept that the world is not particularly fair or that in some cases we are relatively helpless to redress wrong or evil. We all have unfulfilled personal relationships. We have seen or experienced horrible illness. And we are aware of many other terrible injustices. At these times, resorting to discussions of the violation of the law of conservation of energy is not likely to be greeted with much sympathy. Likewise, pointing out that the phenomena in question are inconsistent with the informational and statistical approaches to the second law of thermodynamics is not particularly productive.

This is not meant to imply that nothing can be done about the irrational approaches to life. Certainly the scientific illiteracy of much of the United States makes us more susceptible to the irrational solutions mentioned above. Most of the "more intelligent" books written about pyramids, crystals, etc., have the trappings of science and they can be awfully convincing to those with a weak or nonexistent science background. To such people something like the conservation of energy is often on an equal footing with cosmic auras. A scientifically literate and aware person, on the average, is much less likely to simply "wish upon a star" to make things better. The reasoning associated with scientific training presumably allows someone to think through a particular problem and to fairly accurately assess various alternative solutions.

Much of life is likely to remain nonrational. The creation of a work of art, be it a painting or a novel, can hardly be done by coloring in the numbers or following a prescribed formula. Even in science, the work of the truly great is not completely rational. The mental images of Einstein, the mystical background of Newton, and the familiar story of Kekule and the benzene ring clearly show this. These are truly marvelous. It is the misuse of this side of human nature that should distress us. We all need a little escapism. However, the continual recourse to wishful thinking or unlikely world systems in order to get quick fixes and avoid the real problems will only, in the long run, make such problems worse.

References

Boadella, David. 1973. *Wilhelm Reich: The Evolution of His Work.* New York: Dell.

Bowman, Catherine. 1987. *Crystal Awareness.* St. Paul, Minn.: Llewellyn.

Jerome, Lawrence E. 1989. *Crystal Power.* Buffalo, N.Y.: Prometheus.

King, Serge V. 1977. *Pyramid Energy Handbook.* New York: Warner.

Nielsen, Greg, and Joseph Polansky. 1977. *Pendulum Power.* New York: Warner/ Destiny.

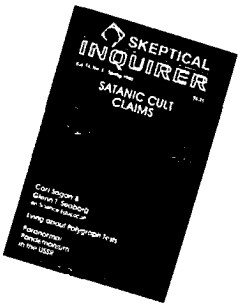
Ord-Hume, Arthur W. J. G. 1977. *Perpetual Motion: The History of an Obsession.* New York: St. Martin's.

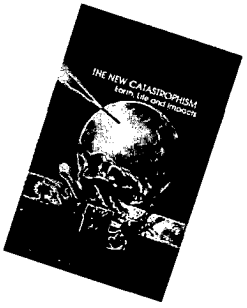
Steven Hoffmaster is in the Physics Department at Gonzaga University, Spokane, WA 99258. He is chairman of CSICOP's Education Subcommittee.

Back Issues of the **SKEPTICAL INQUIRER**

15% discount on orders of $100 or more

($6.25 for each copy. To order, use reply card insert.)





FALL 1990 (vol. 15, no. 1): Neural Organization Technique: Treatment or Torture, *Worrall.* The Spooks of Quantum Mechanics, *Stenger.* Science and Sir William Crookes, *Hoffmaster.* The 'N' Machine, *Cumming.* Biological Cycles and Rhythms vs. Biorhythms, *Wheeler.* The Mysterious Finger-Lift Levitation, Gardner. 1990 CSICOP Conference.

SUMMER 1990 (vol. 14, no. 4): Ghosts make news: How four newspapers report psychic phenomena, *Klare.* Thinking critically and creatively, *Wade and Tavris.* Police pursuit of satanic crime, Part 2, *Hicks.* Order out of chaos in survival research, *Berger.* Piltdown, paradigms, and the paranormal, *Feder.* Auras: Searching for the light, *Loftin.* Biorhythms and the timing of death, *Lester.* Relativism in science, *Gardner.*

SPRING 1990 (vol. 14, no. 3): Why we need to understand science, *Sagan.* The crisis in pre-college science and math education, *Seaborg.* Police pursuit of satanic crime, Part 1, *Hicks.* The spread of satanic-cult rumors, *Victor.* Lying about polygraph tests, *Shneour.* Worldwide disasters and moon phase, *Kelly, Saklofske, and Culver.* St. George and the dragon of creationism, *Gardner.*

WINTER 1990 (vol. 14, no. 2): The new catastrophism, *Morrison and Chapman.* A field guide to critical thinking, *Lett.* Cold fusion: A case history in 'wishful science'? *Rothman.* The airship hysteria of 1896-97, *Bartholomew.* Newspaper editors and the creation-evolution controversy, *Zimmerman.* Special report: New evidence of MJ-12 hoax, *Klass.* The great Urantia mystery, *Gardner.*

FALL 1989 (vol. 14, no. 1): Myths about science, *Rothman.* The relativity of wrong, *Asimov.* Richard Feynman on fringe science. Luis Alvarez and the explorer's quest, *Muller.* The two cultures, *Jones.* The 'top-secret UFO papers' NSA *won't* release, *Klass.* The metaphysics of Murphy's Law, *Price.* The Unicorn at large, Gardner.

SUMMER 1989 (vol. 13, no. 4): The New Age—An Examination: The New Age in perspective, *Kurtz.* A New Age reflection in the magic mirror of science, *O'Hara.* The New Age: The need for myth in an age of science, *Schultz.* Channeling, *Alcock.* The psychology of channeling, *Reed,* 'Entities' in the linguistic minefield, *Thomason.* Crystals, *Lawrence.* Consumer culture and the New Age, *Rosen.* The Shirley MacLaine phenomenon, *Gordon.* Special report: California court jails psychic surgeon, *Brenneman.*

SPRING 1989 (vol. 13, no. 3): High school biology teachers and pseudoscientific belief, *Eve and Dunn.* Evidence for Bigfoot? *Dennett.* Alleged pore structure in Sasquatch footprints, *Freeland and Rowe.* The lore of levitation, *Stein.* Levitation 'miracles' in India, *Premanand.* Science, pseudoscience, and the cloth of Turin, *Nickell.* Rather than just debunking, encourage people to think, *Seckel.* MJ-12 papers 'authenticated'? *Klass.* A patently false patent myth, *Sass.*

WINTER 1989 (vol. 13, no. 2): Special report: The 'remembering water' controversy, *Gardner and Randi;* Bibliographic guide to the 'dilution controversy.' Pathologies of science, precognition, and modern psychophysics, *Jensen.* A reaction-time test of ESP and precognition, *Hines and Dennison.* Chinese psychic's pill-bottle demonstration, *Wu Xiaoping.* The Kirlian technique, *Watkins and Bickel.* Certainty and proof in creationist thought, *Leferriére.*

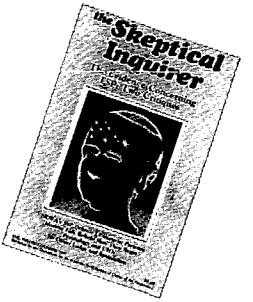
FALL 1988 (vol. 13, no. 1): Special report: Astrology and the presidency, *Kurtz* and *Bob.* Improving Human Performance: What about parapsychology? *Frazier.* The China syndrome: Further reflections on the paranormal in China, *Kurtz.* Backward masking, *McIver.* The validity of graphological analysis, *Furnham.* The intellectual revolt against science, *Grove.* Reich the rainmaker, *Gardner.*

SUMMER 1988 (vol. 12, no. 4): Testing psi claims in China, *Kurtz, Alcock, Frazier, Karr, Klass, and Randi.* The appeal of the occult: Some thoughts on history, religion, and science, *Stevens.* Hypnosis and reincarnation, *Venn.* Pitfalls of perception, *Wheeler.* Wegener and pseudoscience: Some misconceptions, *Edelman.* An investigation of psychic crime-busting, *Emery.* High-flying health quackery, *Hines.* The bar-code beast, *Keith.* Occam's Razor and the nutshell earth, *Gardner.*

SPRING 1988 (vol. 12, no. 3): Neuropathology and the legacy of spiritual possession, *Beyerstein.* Varieties of alien experience, *Ellis.* Alien-abduction claims and standards of inquiry (excerpts from Milton Rosenberg's radio talk-show with guests Charles Gruder, Martin Orne, and Budd Hopkins). The MJ-12 Papers: Part 2, *Klass.* Doomsday: The May 2000 prediction, *Meeus.* My visit to the Nevada Clinic, *Barrett.* Morphic resonance in silicon chips, *Varela and Letelier.* Abigail's anomalous apparition, *Durm.* The riddle of the Colorado ghost lights, *Bunch and White.* The obligation to disclose fraud, *Gardner.*

WINTER 1987-88 (vol. 12, no. 2): The MJ-12 papers: Part I, *Philip J. Klass.* The aliens among us: Hypnotic regression revisited, *Baker.* The brain and consciousness: Implications for psi, *Beyerstein.* Past-life hypnotic regression, *Spanos.* Fantasizing under hypnosis, *Reveen.* The verdict on creationism, *Gould.* Irving Kristol and the facts of life, *Gardner.*

FALL 1987 (vol. 12, no. 1): The burden of skepticism,



Sagan. Is there intelligent life on Earth? *Kurtz.* Medical Controversies: Chiropractic, *Jarvis;* Homeopathy, *Barrett, M.D.;* Alternative therapies, *Jones;* Quackery, *Pepper.* Catching Geller in the act, *Emery.* The third eye, *Gardner.* Special Report: CSICOP's 1987 conference.

SUMMER 1987 (vol. 11, no. 4): Incredible cremations: Investigating combustion deaths, *Nickell and Fischer.* Subliminal deception, *Creed.* Past tongues remembered? *Thomason.* Is the universe improbable? *Shotwell.* Psychics, computers, and psychic computers, *Easton.* Pseudoscience and children's fantasies, *Evans.* Thoughts on science and superstrings, *Gardner.* Special Reports: JAL pilot's UFO report, *Klass;* Unmasking psychic Jason Michaels, *Busch.*

SPRING 1987 (vol. 11, no. 3): The elusive open mind: Ten years of negative research in parapsychology, *Blackmore.* Does astrology need to be true? Part 2: The answer is no, *Dean.* Magic, science, and metascience: Some notes on perception, *D. Sagan.* Velikovsky's interpretation of the evidence offered by China, *Lo.* Anomalies of Chip Arp, *Gardner.*

WINTER 1986-87 (vol. 11, no. 2): Case study of West Pittston 'haunted' house, *Kurtz.* Science, creationism and the Supreme Court, *Seckel,* with statements by *Ayala, Gould,* and *Gell-Mann.* The great East Coast UFO of August 1986, *Oberg.* Does astrology need to be true? Part 1, *Dean.* Homing abilities of bees, cats, and people, *Randi.* The EPR paradox and Rupert Sheldrake, *Gardner.* Followups: On fringe literature, *Bauer;* on Martin Gardner and Daniel Home, *Beloff.*

FALL 1986 (vol. 11, no. 1): The path ahead: Opportunities, challenges, and an expanded view, *Frazier.* Exposing the faith-healers, *Steiner.* Was Antarctica mapped by the ancients? *Jolly.* Folk remedies and human belief-systems, *Reuter.* Dentistry and pseudoscience, *Dodes.* Atmospheric electricity, ions, and pseudoscience, *Dolezalek.* Noah's ark and ancient astronauts, *Harrold and Eve.* The Woodbridge UFO incident, *Ridpath.* How to bust a ghost, *Baker.* The unorthodox conjectures of Tommy Gold, *Gardner.*

SUMMER 1986 (vol. 10, no. 4): Occam's razor, *Shneour.* Clever Hans redivivus, *Sebeok.* Parapsychology miracles, and repeatability, *Flew.* The Condon UFO study, *Klass.* Four decades of fringe literature, *Dutch.* Some remote-viewing recollections, *Weinberg.* Science, mysteries, and the quest for evidence, *Gardner.*

SPRING 1986 (vol. 10, no. 3): The perennial fringe, *Asimov.* The uses of credulity, *de Camp.* Night walkers and mystery mongers, *Sagan.* CSICOP after ten years, *Kurtz.* Crash of the crashed-saucers claim, *Klass.* A study of the Kirlian effect, *Watkins and Bickel.* Ancient tales and space-age myths of creationist evangelism, *McIver.* Creationism's debt to George McCready Price, *Gardner.*

WINTER 1985-86 (vol. 10, no. 2): The moon was full and nothing happened, *Kelly, Rotton, and Culver.* Psychic studies: The Soviet dilemma, *Ebon.* The psychopathology of fringe medicine, *Sabbagh.* Computers and rational thought, *Spangenburg and Moser.* Psi researchers' inattention to conjuring, *Gardner.*

FALL 1985 (vol. 10, no. 1): Investigations of firewalking, *Leikind and McCarthy.* Firewalking: reality or illusion, *Dennett.* Myth of alpha consciousness, *Beyerstein.* Spirit-rapping unmasked, *V. Bullough.* The Saguaro incident, *Taylor and Dennett.* The great stone face, *Gardner.*

SUMMER 1985 (vol. 9, no. 4): Guardian astrology study, *Dean, Kelly, Rotton, and Saklofske.* Astrology and the commodity market, *Rotton.* The hundredth monkey phenomenon, *Amundson.* Responsibilities of the media, *Kurtz.* 'Lucy' out of context, *Albert.* The debunking club, *Gardner.*

SPRING 1985 (vol. 9, no. 3): Columbus poltergeist: I, *Randi.* Moon and murder in Cleveland, *Sanduleak.* Image of Guadalupe, *Nickell and Fischer.* Radar UFOs, *Klass.* Phrenology, *McCoy.* Deception by patients, *Pankratz.* Communication in nature, *Orstan.* Relevance of belief systems, *Gardner.*

WINTER 1984-85 (vol. 9, no. 2): The muddled 'Mind Race,' *Hyman.* Searches for the Loch Ness monster, *Razdan and Kielar.* Final interview with Milbourne Christopher, *Dennett.* Retest of astrologer John McCall, *Ianna and Tolbert.* 'Mind Race,' *Gardner.*

FALL 1984 (vol. 9, no. 1): Quantum theory and the paranormal, *Shore.* What is pseudoscience? *Bunge.* The new philosophy of science and the 'paranormal,' *Toulmin.* An eye-opening double encounter, *Martin.* Similarities between identical twins and between unrelated people, *Wyatt et al.* Effectiveness of a reading program on paranormal belief, *Woods,* Pseudoscientific beliefs of 6th-graders, *A. S. and S. J. Adelman.* Koestler money down the psi-drain, *Gardner.*

SUMMER 1984 (vol. 8, no. 4): Parapsychology's past eight years, *Alcock.* The evidence for ESP, *C. E. M. Hansel.* $110,000 dowsing challenge, *Randi.* Sir Oliver Lodge and the spiritualists, *Hoffmaster.* Misperception, folk belief, and the occult, *Connor.* Psychology and UFOs, *Simón.* Freud and Fliess, *Gardner.*

SPRING 1984 (vol. 8, no. 3): Belief in the paranormal worldwide: Mexico, *Mendez-Acosta;* Netherlands, *Hoebens;* U.K., *Hutchinson;* Australia, *Smith;* Canada, *Gordon;* France, *Rouzé.* Debunking, neutrality, and skepticism in science, *Kurtz.* University course reduces para-

(continued on next page)

Back issues (cont'd)

normal belief, *Gray*. The Gribbin effect, *Roder*. Proving negatives, *Pasquarello*. MacLaine, McTaggart, and McPherson, *Gardner*.

WINTER 1983-84 (vol. 8, no. 2): Sense and nonsense in parapsychology, *Hoebens*. Magicians, scientists, and psychics, *Ganoe and Kirwan*. New dowsing experiment, *Martin*. The effect of TM on weather, *Trumpy*. The haunting of the Ivan Vassilli, *Sheaffer*. Venus and Velikovsky, *Forrest*. Magicians in the psi lab, *Gardner*.

FALL 1983 (vol. 8, no. 1): Creationist pseudoscience, *Schadewald*. Project Alpha: Part 2, *Randi*. Forecasting radio quality by the planets, *Dean*. Reduction in paranormal belief in college course, *Tobacyk*. Humanistic astrology, *Kelly and Krutzen*.

SUMMER 1983 (vol. 7, no. 4): Project Alpha: Part 1, *Randi*. Goodman's 'American Genesis,' *Feder*. Battling on the airwaves, *Slavsky*. Rhode Island UFO film, *Emery*. Landmark PK hoax, *Gardner*.

SPRING 1983 (vol. 7, no. 3): Iridology, *Worrall*. The Nazca drawings revisited, *Nickell*. *People's Almanac* predictions, *Donnelly*. Test of numerology, *Dlhopolsky*. Pseudoscience in the name of the university, *Lederer and Singer*.

WINTER 1982-83 (vol. 7, no. 2): Palmistry, *Park*. The great SRI die mystery, *Gardner*. The 'monster' tree-trunk of Loch Ness, *Campbell*. UFOs and the not-so-friendly skies, *Klass*. In defense of skepticism, *Reber*.

FALL 1982 (vol. 7, no. 1): The prophecies of Nostradamus, *Cazeau*. Prophet of all seasons, *James Randi*. Revival of Nostradamitis, *Hoebens*. Unsolved mysteries and extraordinary phenomena, *Gill*. Clearing the air about psi, *Randi*. A skotography scam, *Randi*.

SUMMER 1982 (vol. 6, no. 4): Remote-viewing, *Marks*. Radio disturbances and planetary positions, *Meeus*. Divining in Australia, *Smith*. "Great Lakes Triangle," *Cena*. Skepticism, closed-mindedness, and science fiction, *Beyerstein*. Followup on ESP logic, *Hardin and Morris* and *Gendin*.

SPRING 1982 (vol. 6, no. 3): The Shroud of Turin, *Mueller*. Shroud image, *McCrone*. Science, the public, and the Shroud, *Schafersman*. Zodiac and personality, *Gauquelin*. Followup on quantum PK, *Hansel*.

WINTER 1981-82 (vol. 6, no. 2): On coincidences, *Ruma Falk*. Croiset: Part 2, *Hoebens*. Scientific creationism, *Schadewald*. Follow-up on 'Mars effect,' *Rawlins*, responses by *CSICOP Council* and *Abell and Kurtz*.

FALL 1981 (vol. 6, no. 1): Gerard Croiset: Part 1, *Hoebens*. Test of perceived horoscope accuracy, *Lackey*. Planetary positions and radio propagation, *Ianna and Margolin*. Bermuda Triangle, 1981, *Dennett*. Observation of a psychic, *McIntyre*.

SUMMER 1981 (vol. 5, no. 4): Investigation of 'psychics,' *Randi*. ESP: A conceptual analysis, *Gendin*. The extroversion-introversion astrological effect, *Kelly and Saklofske*. Art, science, and paranormalism, *Habercom*. Profitable nightmare, *Wells*. A Maltese cross in the Aegean? *Loftin*.

SPRING 1981 (vol. 5, no. 3): Hypnosis and UFO abductions, *Klass*. Hypnosis not a truth serum, *Hilgard*. H. Schmidt's PK experiments, *Hansel*. Further comments on Schmidt's experiments, *Hyman*. Atlantean road, *Randi*. Deciphering ancient America, *McKusick*. A sense of the ridiculous, *Lord*.

WINTER 1980-81 (vol. 5, no. 2): Fooling some people all the time, *Singer and Benassi*. Recent perpetual motion developments, *Schadewald*. National Enquirer astrology study, *Mechler, McDaniel, and Mulloy*. Science and the mountain peak, *Asimov*.

FALL 1980 (vol. 5, no. 1): The Velikovsky affair — articles *by Oberg, Bauer, Frazier*. Academia and the occult, *Greenwell*. Belief in ESP among psychologists, *Padgett, Benassi, and Singer*. Bigfoot on the loose, *Kurtz*. Parental expectations of miracles, *Steiner*. Downfall of a would-be psychic, *McBurney and Greenberg*. Parapsychology research, *Mishlove*.

SUMMER 1980 (vol. 4, no. 4): Superstitions, *Bainbridge and Stark*. Psychic archaeology, *Feder*. Voice stress analysis, *Klass*. Follow-up on the 'Mars effect,' Evolution vs. creationism, and the Cottrell tests.

SPRING 1980 (vol. 4, no. 3): Belief in ESP, *Morris*. UFO hoax, *Simpson*. Don Juan vs. Piltdown man, *de Mille*. Tiptoeing beyond Darwin, *Greenwell*. Conjurors and the psi scene, *Randi*. Follow-up on the Cottrell tests.

WINTER 1979-80 (vol. 4, no. 2): The 'Mars effect' — articles *by Kurtz, Zelen, and Abell; Rawlins; Michel and Françoise Gauquelin*. How I was debunked, *Hoebens*. The metal bending of Professor Taylor, *Gardner*. Science, intuition, and ESP, *Bauslaugh*.

FALL 1979 (vol. 4, no. 1): A test of dowsing, *Randi*. Science and evolution, *Godfrey*. Television pseudo-documentaries, *Bainbridge*. New disciples of the paranormal, *Kurtz*. UFO or UAA, *Standen*. The lost panda, *van Kampen*. Edgar Cayce, *Randi*.

SUMMER 1979 (vol. 3, no. 4): The moon and the birthrate, *Abell and Greenspan*. Biorhythms, *Hines*. 'Cold reading,' *Randi*. Teacher, student, and the paranormal, *Kral*. Encounter with a sorcerer, *Sack*.

SPRING 1979 (vol. 3, no. 3): Near-death experiences, *Alcock*. Television tests of Musuaki Kiyota, *Scott and Hutchinson*. The conversion of J. Allen Hynek, *Klass*. Asimov's corollary, *Asimov*.

WINTER 1978-79 (vol. 3, no. 2): Is parapsychology a science? *Kurtz*. Chariots of the gullible, *Bainbridge*. The Tunguska event, *Oberg*. Space travel in Bronze Age China, *Keightley*.

FALL 1978 (vol. 3, no. 1): An empirical test of astrology, *Bastedo*. Astronauts and UFOs, *Oberg*. Sleight of tongue, *Schwartz*. The Sirius "mystery," *Ridpath*.

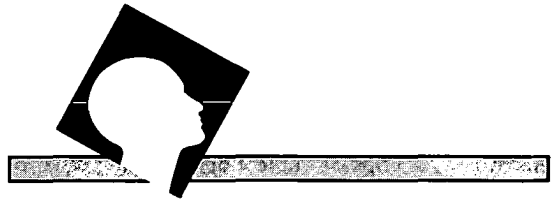
SPRING/SUMMER 1978 (vol. 2, no. 2): Tests of three psychics, *Randi*. Biorhythms, *Bainbridge*. Plant perception, *Kmetz*. Anthropology beyond the fringe, *Cole*. NASA and UFOs, *Klass*. A second Einstein ESP letter, *Gardner*.

FALL/WINTER 1977 (vol. 2, no. 1): Von Däniken, *Story*, The Bermuda Triangle, *Kusche*. Pseudoscience at Science Digest, *Oberg and Sheaffer*. Einstein and ESP, *Gardner*. N-rays and UFOs, *Klass*. Secrets of the psychics, *Rawlins*.

SPRING/SUMMER 1977 (vol. 1, no. 2): Uri Geller, *Marks and Kammann*. Cold reading, *Hyman*. Transcendental Meditation, *Woodrum*. A statistical test of astrology, *McGervey*. Cattle mutilations, *Stewart*.

FALL/WINTER 1976 (vol. 1, no. 1): Dianetics, *Wallis*. Psychics and clairvoyance, *Fine*. "Objections to Astrology," *Westrum*. Astronomers and astrophysicists as astrology critics, *Kurtz and Nisbet*. Biorhythms and sports, *Fix*. Von Däniken's chariots, *Omohundro*.

Letters to the Editor



Resolving parapsychology

Near the end of his review of Ray Hyman's *The Elusive Quarry* (Summer 1990) David Marks writes: "*The fact is that the major questions of parapsychology could all be resolved one way or another in a period of no longer than three years* [author's italics]. In all the major areas—PK, ganzfeld, and precognition—properly controlled large-scale experiments could be conducted, analyzed, and reported by cooperative teams of disbelievers, skeptics, and believers."

I am writing to support this proposal and to appeal to your readers to agitate for its implementation. I myself touted just such a scheme at the 1981 convention of the Parapsychological Association with my paper "Why We Need a Commission of Inquiry." Whatever we ourselves may believe, it is surely scandalous that the existence of psi should still be a matter of opinion and that even Ray Hyman has to admit that he does not have "the faintest idea" whether psi exists. There is surely no more important project that CSICOP could undertake than to collaborate on such an undertaking, and I am confident that the Parapsychological Association would cooperate. Perhaps the American Association for the Advancement of Science could act as overseers.

The only serious obstacle that I can see is the financial one. Marks is surely being too sanguine when he says, airily, that "the research could be funded by the usual organizations and benefactors." Could he be more specific? The fact is that it has always been extraordinarily difficult to get funding for anything connected with parapsychology. Even the highest-quality research is no longer safe and, recently, Charles Honorton has had to close down his laboratory for lack of funds. To carry out the sort of definitive research that Marks envisages would be expensive and, ironically, the foundations that could afford to finance it tend to be influenced by people, like Marks himself, who are so contemptuous of parapsychology that they would be reluctant to do so. However, if Marks can suggest how we might circumvent this difficulty, I feel sure that the parapsychological community would welcome this prospect.

John Beloff
Department of Psychology
University of Edinburgh
Edinburgh, Scotland, U.K.

Mythology Not New Age

Over the past several years of reading the SKEPTICAL INQUIRER I have come to expect well-researched articles. Thus I was somewhat disappointed by Murray L. Bob's article (News & Comment, Summer 1990) about the "replacement" of New Age thought, specifically dealing with mythology.

The point in comparing Joseph Campbell and Bill Moyers to Shirley MacLaine was unclear. Does Bob argue that Campbell intended to set up mythology as the latest pseudoscientific craze? If so, it is an argument with little merit. Campbell was a scholar of mythology and religion, not a believer himself. Nor did he advance any particular myth system as superior to others. Indeed, one of the first things Campbell said in *The Power of Myth* was: " . . . You don't need mythology. I don't believe in being interested in a subject just because it's said to be important." He also argued that any new myth/

philosophy for us in the present must be based upon reason.

If, on the other hand, Bob blames Campbell and Moyers for making mythology a popular subject again, and therefore responsible for all the whacko Goddess cults on the loose, he needs a lesson in logic. As a teacher myself, there may be nothing more infuriating than a student who insists upon twisting meanings and misunderstanding what is taught. If a drunk driver demolishes your parked car, are you to blame for leaving it where he could hit it? Of course not; neither should Campbell be taken to task for such nuttiness (especially since he harped upon the metaphoric nature of myth and the need to apply reason in studying it).

Speaking of metaphor, Bob's reference to "primitive" people eating brains to gain intelligence leads me to suppose Bob to be relatively naive on mythological teachings. Such an act (much like the wearing of an animal's skin, etc.) is a metaphor of taking on the characteristics of that animal, not a literal assumption of increasing brain power. The difficulty for most people is in realizing that most myths (including today's active religions) were never meant to be read literally.

Christopher J. Sirola
Department of Physics
and Astronomy
University of Pittsburgh
Pittsburgh, Pa.

When Bill Moyers asked Joseph Campbell if he believed in reincarnation, Campbell replied that he believed in the *metaphor* of reincarnation, a significant qualification. Campbell's scholarly exploration of mythic symbols is a far cry from the channeling fads of pampered celebrities.

Sadly, Murray L. Bob's listing of New Age tendencies assigns Campbell to the same level of hell as faith healers, con artists, and—God help us—Shirley MacLaine. Bob has neglected to define a key term. What *is* "New Age"?

We can't say New Age is what sells at the New Age section of bookstores. Martin Gardner's books might be there if the store owner thought it a good marketing strategy. Nor can we take the word of recognized New Age muckety-mucks: MacLaine can and does cite Einstein, Kant, and Edison.

But consider this: I believe few skeptical inquirers would object to finding a moral lesson in Noah and the Ark, discussing psychological rebirth by making an analogy to reincarnation, or enjoying a romantic moonlit walk. But when symbols are taken as facts—a biblical deluge cited in opposition to evolution, a "past life" marriage used to justify an affair with someone else's spouse, or weird behavior said to be caused by lunar effects—some fundamental line has been crossed. One characteristic of New Age thinking is that it robs metaphors of their potential philosophical value as analogies and hauls them into the precise, factual world of science, where myths no longer have even a symbolic leg to stand on. If this makes sense, consider Joseph Campbell. Our thinking becomes muddled, Campbell suggests, when we "concretize" metaphors. To take myths, metaphors, and symbols seriously doesn't mean to take them literally.

My objection to Bob's treatment of Campbell does not diminish my appreciation of the many sound points Bob makes in his valuable article. I don't buy everything in Joseph Campbell's work either. But why decry this thoughtful maverick as New Age? We need to separate philosophers from fruitcakes.

Gary Hubbell
Kent, Ohio

I am distressed at Murray L. Bob's implication of Joseph Campbell's *Power of Myth* as some kind of witchcraft by juxtaposing Campbell in the same paragraph with Shirley MacLaine. Campbell is a historian, not a voodoo shaman. He tells us that myth has had a tremendous hold on the human mind through the ages. But he urges us to treat myth as myth and not concretize

it by turning it into religion as humans are wont to do.

Also, Bob's shotgun approach to addiction and AA-type groups seems to put him into the league of those who look at addiction as a problem requiring only willpower for recovery. AA has helped thousands overcome their addictions through voluntary action. If Bob doesn't like the "higher power" aspect of AA, I would recommend to him the new group, Secular Organizations for Sobriety, or SOS.

Paul Popenoe
Lafayette, Calif.

Relativism in science

Martin Gardner clearly had such a good time making me the bête noire of any rational person in the Summer 1990 SKEPTICAL INQUIRER ("Relativism in Science") that I feel almost like the Grinch who stole Christmas for saying that I agree with much of what he says, and many of the points he seems to think he is making against my views were also made in my book.

Gardner concludes his argument against "relativism" by saying, "Nobody denies that science is a human tool, or that its history is influenced by cultural forces in all sorts of interesting ways. Nobody denies that scientists invent theories by creative acts similar to those of poets and artists. But once a theory is formulated, it is tested by a process that, in the long run, is singularly free of cultural bias. False theories are not shot down by a change in language, but by the universe." I heartily agree and say so at length in *Inventing Reality.* I would prefer not to use the word *false,* however, which I reserve for mathematical and logical proofs. I think the word *limited* is both more accurate and less pejorative.

I do *not* "see the history of science as a series of cultural preferences." I thought I made that clear in the extensive section where I approvingly quote Sam Ting's statement, "Science is one of the few areas of human life where the majority does *not* rule." Science is characterized by the progressive expansion of our ability to predict the behavior of the physical world. I do not believe that this progress, however, should be interpreted as some sort of asymptotic approach to grasping "nature's own language." After all, progress has come by way of major revisions in the way we think of nature (for example, from thinking of gravity as action at a distance, to gravity as a property of the geometry of space-time, to gravity as a manifestation of local gauge invariance).

Gardner accuses me of promulgating the "wild theme . . . that physicists do not discover the laws of nature. They invent them. Newton didn't discover the law of gravity. He invented it." But Gardner himself says, "Nobody denies that scientists invent theories by creative acts similar to those of poets and artists." So why is he so unhappy when I say the same thing? Perhaps he would have been less enraged had I said that what Newton *did* discover is that the law of gravity he invented is a useful way of describing the world, including among many other things, the motion of the planets. If Gardner wants to say that Newton invented a theory whose success demonstrated that he had discovered a law of nature, then Gardner will presumably have to add that this law of nature was repealed as a result of Einstein's work.

I think part of the problem may be that Gardner takes literally statements I use metaphorically. He quotes me talking about the mutability of history. Certainly he does not disagree that we, like the historians in Orwell's *1984,* continually rewrite history. Presumably Gardner is upset by my statement that the past is transformed by language. But this is simply a metaphorical way of pointing out that the past is only a present reality in the form of a collection of artifacts and the stories historians tell about those artifacts. The past, insofar as we are concerned, is transformed when new evidence leads historians to rewrite history.

Gardner becomes very exercised

when I say, "The laws of physics are *our* laws not nature's." He concludes from this that I am saying, "*We* are the gods who shape reality." But his interpretation is nonsense. The laws of physics are our laws because, as Einstein says, they are "free creations of the human mind, and are not, however it may seem, uniquely determined by the external world." Of course we are not free to say whatever we like—not if we want what we say to lead to predictions that agree with experiments. Nature constrains, but does not dictate.

I do have a fundamental disagreement with Gardner, however. I do not find relativity and quantum mechanics to be "a benign refinement" of classical physics. I do not think that Einstein simply "added qualifications to Newtonian physics." Einstein fundamentally altered our views of the nature of space and time and shook a deep-seated belief that Newton had somehow discerned the mind of God when he invented mechanics. The *only* way in which Einstein's general relativity resembles Newton's theory of gravity is that the two theories make similar predictions under certain circumstances—conceptually and mathematically the theories are profoundly different. Quantum theory made even more fundamental changes in our view of the physical world, eliminating the hope that we could predict the behavior of individual atomic systems and forcing us to accept that some physical systems can never be truly "separated."

The view of language and reality I explore in the book is a product of the momentous impact that relativity and quantum mechanics have had on our understanding of the physical world. I share much of my view of this impact with Bohr, Heinsenberg, and Einstein, as well as with almost every contemporary physicist. (I am not familiar with Shirley MacLaine's views on fundamental physics.)

Bruce Gregory
Harvard-Smithsonian Center
for Astrophysics
Cambridge, Mass.

Mr. Gardner replies:

The basic disagreement between Gregory and me is that he is a pragmatist who defines truth as the passing of tests, whereas I, following Aristotle, define truth as correspondence with an external world. The very title of Gregory's book, Inventing Reality, *implies that "reality" is a product of human experience rather than a structure "out there" toward which science moves closer and closer in its descriptions, even though it may never reach absolute accuracy.*

Gregory writes that "insofar as we are concerned" history is transformed when historians revise their opinions. But this is trivial and obvious. It means no more than that historians change their minds. The deeper question, which Gregory evades, is whether there is a fixed, timeless past that is unaltered by changing opinions.

Gregory seems unaware that pragmatism has been on the skids for half a century, not so much because it is "wrong," but because it is too confusing a language. Look into any recent book on the philosophy of science, and you are unlikely to find a single reference to John Dewey. As to reasons for the decline, which I attribute mainly to Alfred Tarski's precise definition of semantic truth, see the chapter on "Why I Am Not a Pragmatist" in my Whys of a Philosophical Scrivener.

It goes without saying that Newton "invented" the law of gravity and Einstein "invented" relativity, in the sense that they thought of these conjectures and wrote them down. The deeper question, which Gregory ignores, is whether in devising conjectures, and having them strongly confirmed by testing, scientists "discover" facts and laws that slowly get closer to accurate descriptions of a structure "out there," not made by us. Astronomers may alter their opinions about the mass of Pluto, but that doesn't mean that Pluto keeps altering its mass. If science is not getting asymptotically closer to objective truth, there is no way to explain its steadily increasing predictive power.

It is a commonsense realism, assumed by almost all philosophers and scientists, and by all ordinary people, that Gregory is reluctant to affirm. If he did so, he would have called his book "Discovering Reality." In his letter, Gregory backs away from his

more outrageous statements by calling them metaphors, but that is precisely the trouble. Such metaphors serve no useful purpose. We all know that science is fallible and keeps changing. Using metaphors that blur the distinction between what scientists say and what writers of stories say is to introduce nothing but confusion to the understanding of science.

Multiple personality disorder

In "Police Pursuit of Satanic Crime, Part II" (Summer 1990), Robert Hicks cites Goleman as considering epilepsy to be a symptom accompanying personality changes in persons with multiple personality disorder (MPD). Perhaps he has it backward. Maybe the signs and symptoms he attributes to MPD actually result from the epilepsy. Psychomotor epileptic seizures are often unrecognized and untreated.

Did any of the investigators who reported that MPD results from physical and sexual abuse during childhood produce any corroborating evidence of abuse? (I suppose that comparison with a control group is too much to ask for.) Or did they simply accept the testimony of one or more of the "personalities"? Because many of the "personalities" seem to be delusional or to have serious memory disorders, this acceptance may be unwise. The investigators may have selected the accounts that jibed with their theories about childhood trauma. Perhaps the investigators unwittingly encouraged subjects to confabulate or even fabricate memories of traumatic experiences that did not occur. In particular, I doubt any revelations that occur only after years of in-depth therapy.

Even if an investigator somehow managed to prove that a person had been abused during childhood, it would not prove that the abuse *caused* the disorder. Because MPD (unlike child abuse) is rare and arises long after the proposed causes, it is difficult to study prospectively. I therefore doubt that anyone will ever prove anything about the relationship between child abuse and MPD.

Laurie Endicott Thomas
Edison, N.J.

That curious Urantia Book

The letters about *The Urantia Book* from D. Julio Edwards and Terry Kruger (Summer 1990) show both strongly believe in the revealed truth of that curious volume. No one can argue rationally against private religious convictions, which are not subject to evidential inquiry. However, I noted implied claims in favor of *UB*'s "truth" supposedly based on rational evaluation of evidence. This is a whole different ballgame—and this particular game has already been played out. From November 1989 through March 1990. I corresponded at some length with Edwards and with Kruger regarding evidence in favor of *UB*'s ideas. The exchange typified what happens when occult claims in all their absurdity are taken at face value and examined under the everyday standards of science and logic. The Kansas City Committee for Skeptical Inquiry collected this correspondence in a pamphlet, "*UB* . . . or Not *UB*? (That Was the Question)," and distributed copies to all similar groups listed in the back of this journal.

Actually, only *half* the dialogue was included, since Edwards and Kruger ignored or declined repeated requests to publish their own (presumably) best knowledgeable position in favor of *UB*. Plausible reasons for this disinclination on the part of articulate, pro-*UB* spokesmen will, I feel, suggest themselves to readers of the remaining material.

It is therefore interesting to note the same tired arguments being recycled without a blush by the same proponents, and the same dubious cosmic scenario being touted yet more fervently despite (apparently) unanswerable challenges to its evidential basis.

Sam Gill
Kansas City, Mo.

A year or so ago I suggested to the SKEPTICAL INQUIRER that if it had not already done so it might have a look at *The Urantia Book*. Whether or not my suggestion sparked it, I want to thank Martin Gardner, and the editors, for his painstaking and quite charitable critique of that pleonastic hodgepodge of fundamentalist flapdoodle.

Before joining the chorus of Gardner's castigators, one would do well to have a look at this monumental condescension in the Foreword of *The Urantia Book*, by the E.T. known as the "Chief of the Corps of Superuniverse Personalities":

> In the minds of the mortals of Urantia—that being the name of your world—there exists great confusion respecting the meaning of such terms as God, divinity, and deity.... Because of their [Urantians'] conceptual poverty associated with so much ideational confusion...."

Conceptual poverty about the meaning of the word God? Shades of Aquinas, Augustine, Spinoza!

I hope Martin Gardner will give us more on *Urantia* and its claim to extraterrestrial authorship.

Although my name is the same, I am not the MJ-12 UFOlogist.

William L. Moore
Hemet, Calif.

A book-seller's thank you

As a reader of the SKEPTICAL INQUIRER for the past few years, I want to say thank you for such a fascinating and thought-provoking magazine.

I am currently the newsstand supervisor and a sales clerk in a large bookstore in Clearwater, Florida, and see what the public is buying in the paranormal and fringe-science realm. Not surprisingly, we do sell quite a lot of credulous books on all the various New Age subjects. Needless to say, it's difficult at times for me not to openly denigrate a customer at the cash register who is buying the latest Shirley MacLaine opus or the newest book on crystal power. Instead, I try to refer them to a more rational book on the subject if I can, and without trying to impose on their right to buy whatever they want. Luckily, we do carry a large number of skeptical titles, mainly from Prometheus Books.

Of course, our metaphysical and occult section is very large, as in most bookstores, and very popular. But, it seems to me, more and more people are finding the skeptical titles mixed in with the credulous ones and are buying them. We've sold out of Randi's *Faith-Healers* twice in the past six months or so. Our copies of Gardner's *Science: Good, Bad & Bogus* are gone now, too. Also, on my newsstand I carry the SKEPTICAL INQUIRER. I place six copies with the New Age magazines, and six with the science/nature titles. And, if I have any copies left over when the returns are due (usually just one copy), I strip the covers for credit and put the magazines in our employee break room (where it is read). You can rest assured that, here in the Tampa Bay area at least, people are using their intelligence more than you'd think.

Greg Simpson
Clearwater, Fla.

Undergraduate course

I am developing a lower-level undergraduate course on "Science and Pseudoscience" that will be part of a new Science and Society program at the University of North Carolina at Wilmington. Oriented toward liberal-arts students who have only a limited background in science, it will describe basic characteristics of the scientific method and analyze various areas that we would generally characterize as pseudoscientific. "Fringe" areas will also be discussed. One overall goal is to help the students develop their own evaluation skills so that they will more critically analyze claims to knowledge.

At this time, I am considering McCain and Segal's *The Game of Science*, Stano-

vich's *How to Think Straight about Psychology*, and Radner and Radner's *Science and Unreason* as texts, with additional liberal readings from *SI*.

I would appreciate receiving course outlines from anyone who has taught a similar course or any suggestions that *SI* readers might have, including topics that should be covered, good articles to assign, and classroom exercises that would give students firsthand experience in the difference between seeing and believing.

Robert T. Brown
Department of Psychology
University of North Carolina
Wilmington, NC 28403-3297

Strieber's joke

Now we have *three* serious academic discussions of the *real* meaning of Whitley Strieber's "experiences" as described in *Communion*, the book and the movie. Robert Baker (*SI*, Winter 1987-88) offers some explanations from psychology, labeling them "hypnopompic hallucinations." Bill Ellis (Spring 1988), through the perspective of comparative folklore, urges us to recognize that even responsible, stable people can have unusual perceptual experiences. And technical writer Ronald Story (Spring 1990) says he believes that Strieber "is giving an honest account of his hallucinations and delusions."

All these writers are sincere, and all base their assessments in sound academic theory, and their accounts are interesting and valuable. But only Ellis acknowledges (and dismisses) an earlier, simpler, and far more likely explanation for Strieber's narratives. Ernest Taves (Fall 1987), following the principle of Occam's Razor (correctly, *pace* Ellis), showed that the best explanation is that Strieber is "playing a joke" on his readers.

But even this is a level above the most likely explanation. Come on, everybody, back to basics: Whitley Strieber is a successful writer of science and horror *fiction* (*The Wolfen, The Hunger, Cat Magic*) and apocalyptic or "doomsday" *novels* (*Warday, Nature's End*). By the time he conceived *Communion*, the alien-abduction genre (and the related "satanic cult-survivor" genre) was a hot seller. Is it the word "true" in the book's and movie's subtitles that has stimulated all this serious academic analysis? I could write an article on the nature of "truth" and "experience" from an anthropological perspective that would justify his use of the word (and our credulity). But based on simple probability, and the solid evidence available, the first explanation to consider is that Strieber is continuing what he has demonstrably done so well. Like Stephen King, Strieber's success lies not in a sparkling writing style, nor in careful attention to logic or chronology, but in an extremely clever imagination. And the successful writer of fiction, recognizing the commercial value in publicity, may act publicly from this imagination, "as a tool of his craft," as Story put it.

Whitley Strieber must be delighted at all this very serious discussion of his work.

Phillips Stevens, Jr.
Department of Anthropology
University of Buffalo, SUNY
Buffalo, N.Y.

Airship sightings

Regarding Robert Bartholomew's article (Winter 1990) on the 1896-97 airship hysteria, I've seen a reference to what seems to have been a "third wave" of such sightings in July/August 1897, well after the flap ended in the United States and centered in British Columbia, Canada. Numerous sightings were reported over a matter of weeks in Victoria and elsewhere on Vancouver Island, from a steamer at sea, by most of the local dignitaries of Rossland (in the B.C. interior), and by "thousands of Vancouver citizens." As in the parent American craze, many observers assumed they were seeing August Andrée's Arctic balloon, or else some

new invention being secretly tested by night. Descriptions varied from "a luminous globe apparently about four feet in diameter" to "a very bright red star surrounded by a luminous halo, cigar-shaped," occasionally dropping a "shower of sparks like the spluttering of an arc light."

My source is an article titled "British Columbia's First Visitors from Outer Space," in a popularized local history magazine called *Canada West* (D. Pethick, vol. 9, no. 1, Spring 1979). The article does not, unfortunately, provide full references, but most of its quotes appear to be taken from the Victoria *Colonist*. As the title indicates, the author (perhaps predictably) gives the 1897 flap much the same treatment as others have given Ezekiel's wheel-within-a-wheel or Elijah's fiery chariot—in fact, reference is made to both those stories in the article's first paragraph. Altogether, the piece is a nice second-order example of Bartholomew's "redefinition of the ambiguous."

To do my ancestors credit, other interpretations put forward at the time included *ignis fatuus*, cloud reflections of surface-based lights, and mirages produced in the hot midsummer air. The *Colonist* interviewed "prominent members of the [Victoria] natural history society," who replied as one "that there was nothing mysterious about the light seen, but that people had been prepared for something uncanny and consequently felt bound to see it."

Rebecca Bradley
English Department
Kuwait University
Safat, Kuwait

(This letter was received before the Iraqi invasion of Kuwait.—ED)

Quakes as punishment

Robert Sheaffer in "Psychic Vibrations" (Summer 1990) mentions a creationist's interpretation of the October 1989 earthquake in San Francisco. There is a long history of such misinterpretation. In 1906, when the great earthquake and fire wiped out much of San Francisco, it was generally assumed among the religious community that this most devastating earthquake in U.S. history was God's punishment against the most wicked community in the country. Yet while almost every building in the northeast quarter of the city was destroyed, a portion of the notorious Barbary Coast, including a famous whisky distillery, remained unscathed. This led a San Francisco newspaper to publish the following poem:

> If, as they say, God spanked the town
> For being overfrisky,
> Why did He burn His churches down
> And save Hotaling's Whisky?

Hotaling Place, an alley that extends north from the Transamerica Pyramid building, was named to honor the famed distillery. Thought you'd want to know.

John McCarroll
San Francisco, Calif.

The letters column is a forum for views on matters raised in previous issues. Brief letters (less than 250 words) are welcome. We reserve the right to edit longer ones. They should be typed double-spaced. Due to the volume of letters, not all can be published. Address them to Letters to the Editor, SKEPTICAL INQUIRER, 3025 Palo Alto Dr. NE, Albuquerque, NM 87111.

Subscription Service

Are you curious about your subscription?

If you have questions about your SKEPTICAL INQUIRER subscription payment, change of address, delivery, or other problems, please call our Subscription Service at

716-834-3222

Or write to:

Skeptical Inquirer Subscription Service
Box 229
Buffalo, NY 14215-0229

SUBSCRIPTION SERVICE

We will need to know your name, address, zip code, subscriber number (on your mailing label), and the date and amount of any payment in question.

European subscribers should contact Michael Hutchinson, 10 Crescent View, Loughton, Essex, IG10 4P2, U.K. (011-44-81-508-29-28).

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION
(Required by 39 U.S.C.)

Date of filing: September 28, 1990
Title: The Skeptical Inquirer
Frequency of issue: Quarterly
Complete mailing address of known office of publication: 3159 Bailey Ave., Buffalo, NY 14215
Complete mailing address of the headquarters of general business offices of the publisher: 3159 Bailey Ave., P.O. Box 229, Buffalo, NY 14215
Publisher: CSICOP, Inc. (Committee for the Scientific Investigation of Claims of the Paranormal), 3159 Bailey Ave., P.O. Box 229, Buffalo, NY 14215
Editor: Kendrick Frazier, 3025 Palo Alto Dr., N.E., Albuquerque, NM 87111
Managing Editor: Doris Doyle, P.O. Box 229, Buffalo, NY 14215
Owner: CSICOP, Inc. (Committee for the Scientific Investigation of Claims of the Paranormal, Inc.), 3159 Bailey Ave., P.O. Box 229, Buffalo, NY 14215
Known bondholders, mortgagees, and other security holders: None

	Aver. no. copies of each issue during preceding 12 months	Actual no. copies of single issue published nearest filing date
A. Total no. copies printed (Net press run)	42,060	43,392
B. Paid and/or requested circulation		
1. Sales through dealers and carriers, street vendors and counter sales	1,156	1,215
2. Mail subscriptions	33,795	34,317
C. Total paid and/or requested circulation	34,951	35,523
D. Free distribution by mail, carrier, or other means, samples, complimentary, and other free copies	2,394	2,579
E. Total distribution (Sum of C and D)	37,345	38,111
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	4,715	4,281
2. Return from news agents	0	0
G. Total (Sum of E, F 1 and 2)	42,060	42,392

CSICOP News

Skepticism in Europe: Brussels Conference Tackles Diverse Issues

PAUL KURTZ

Paranormal beliefs are as widely accepted on the European continent as they are in other parts of the world. Although many Europeans suppose that their societies are too sophisticated to fall for the kind of errant nonsense prevalent elsewhere, a recent congress of European skeptics demonstrated how false this supposition is. Europeans are appalled at the steady stream of books, movies, and television programs that come from North America touting the paranormal, and they are also familiar with the superstitious belief systems that persist in the Third World. Yet something analogous exists in Europe. After all, since Europe was prey to the most violent forms of ideological propaganda earlier in this century, from fascism to Stalinism, why should it be immune to the paranormal mythologies of today? Some European newspapers seem even more sensationalist, if that is possible, than those in the United States.

In response to this rising tide of paranormal belief, in recent years we have witnessed the formation of 19 European skeptics groups, including one in the Soviet Union. Although entirely independent and autonomous, these groups work cooperatively with CSICOP and the SKEPTICAL INQUIRER and exchange information and research data. These organizations are relatively small, but virtually all of them publish their own magazines or newsletters, which have an average circulation of 500 to 1,000 readers. These include the *Skeptic*, published in the U.K., *Skepter* in the Netherlands, the *NIVFO Bulletin* in Norway, *La Alternativa* in Spain, *CICAP* in Italy, *Skeptikko* in Finland, and *Skeptiker* in Germany.

The influence of the skeptics groups far outweighs their numbers; for they are often the only reliable source of scientific information about popular paranormal claims. Their services are constantly sought out by other scientists, members of the media, and interested laypersons.

CSICOP in no small way is responsible for the formation of these groups—most often a group was formed as a result of the efforts of European readers of the SKEPTICAL INQUIRER and/or visits from members of CSICOP's Executive Council, most often James Randi, Ray Hyman, or myself, or from former executive director Mark Plummer. We would like to point out that these autonomous groups speak only for themselves and that CSICOP is not responsible and cannot be held liable for what is said by these groups or individuals.

The fourth conference of European skeptics was convened August 10 to 11, 1990, in Brussels, Belgium. It was cosponsored by CSICOP and SKEPP (*Studiekving Voor Kritsche Evalvtie Van Pseudowetenschop en het Paranormal*), the newly formed Flemish-speaking group in Belgium. There is also a French-speaking skeptics group headquartered in Brussels, the *Comite Para;* and, although this group was not active in organizing the conference, it did have representatives in attendance. The conference brought together some 120 delegates from 20 nations, including 14 European countries. We met on the campus of the Free University of Brussels (*Vrieje Universteit Bruxelles*). The three previous European congresses were held during the 1980s in Paris, London, and Bad Tolz, near Munich.

The opening session on Saturday, August 11, was devoted to "The State of Paranormal Belief in Europe." As the moderator of this session, I pointed out that science is international in scope, as is skepticism. The problem we face—the proliferation of paranormal claims and the need for responsible, scientific evaluation of them—is worldwide, particularly so since, when a paranormal claim is made, it is immediately known from New York to Paris and from Moscow to Beijing. This in no small way is due to the international wire services, but the problem is exacerbated by the fact that the media are dominated by five or six conglomerates who package and sell the paranormal to the public worldwide. In any case, the purpose of CSICOP is to keep alive the interest in the scientific approach to such claims and especially to cultivate in the wider public an appreciation for the use of the scientific method and critical thinking in appraising claims to truth.

Of special concern in this session was the popularity among Europeans of alternative health cures, such as holistic medicine and homeopathy. In our view, adequate scientific verification has not been made to support these fields. The European skeptics at our meeting agreed that many of these practices can be dangerous to the public health. Unfortunately, government and health professionals are hesitant to criticize questionable therapies because of the economic and political power of their advocates. Indeed, Amardeo Sarma, head of the skeptics group in western Germany, pointed out that when the new European Parliament convenes, it will enact legislation for all of Europe. He is fearful that this will permit free reign to quacks and charlatans, who are now permitted to practice in some countries and are regulated or restricted in others.

Lars Jepson, of Denmark, described the situation in his country. He said that, although the Danes have a tradition of rationalism and enlightenment, the New Age has recently made considerable inroads on the public consciousness. He focused on the use of homeopathy and other "natural medicines" and also took issue with the government's endorsement of dowsing. Alain Mey, a representative from France, deplored the sale of homeopathic medicines in most pharmacies in his country.

Michael Hutchinson described the level of belief in Britain. He pointed out that the U.K. group was the first of the European skeptics organizations and is now in its tenth year, with branches in Manchester, Wessex, and Wales, and includes the London Student Skeptics group. Of special interest is the considerable impact that skepticism has had on the British press. Much of this is no doubt due to the valiant efforts of James Randi, who over the years has been a regularly featured guest on many tele-

Susan Blackmore reviews her research on out-of-body experiences.

vision programs in the U.K. Indeed, the television production company Open Media covered the Brussels conference and is building an entire program around CSICOP. Immediately after the Brussels meeting, Open Media came to Buffalo to film a segment at CSICOP headquarters.

In Britain, the *London Observer*, the *Manchester Guardian*, the *Independent*, and Reuters news service reported the conference. The event was also covered by newspapers and television stations in Belgium and by reporters from the Netherlands, West Germany, Portugal, the Middle East, and elsewhere.

The second conference session on Saturday dealt with a variety of topics. Susan Blackmore, a psychologist from the University of Bristol in the U.K., reviewed her research on out-of-body experiences and described her efforts to explain this phenomenon in normal psychological terms.

Henri Broch, a physicist from the University of Nice, described his work on a special data bank. His Minitel computer information service is offered by the French telephone company to its more than five million subscribers, who can ask questions on any paranormal topic—from acupuncture and horoscopes to parapsychology, UFOs, and fringe-health cures. Professor Broch provides information based on careful scientific research.

Professor Cornelis de Jager, professor of space research at the University of Utrecht in the Netherlands, gave a stimulating, amusing talk on "Astrology, Pyramidology, and Cyclopsophy." He analyzed the methods and the criteria used in scientific research and discussed some of the most popular pseudosciences. He pointed out that the "religion of the Great Pyramid" was based on the "accidental coincidence of the pyramid's structural data with fundamental astronomical data," and he then went on to develop an analogous pseudoscience based on his bicycle, which showed equally surprising coincidences.

Ray Hyman, of the University of Oregon, discussed how to be a "good skeptic." It is important, he said, that we be fair-minded and careful in appraising the research of others. James Randi highlighted some of his investigations of the paranormal. Afterward Randi was extensively questioned by members of the audience about his recent criticism of a homeopathy experiment conducted at a French laboratory. His investigation was done in cooperation with the British science magazine *Nature*, quite independent of CSICOP.

Astronomers Jean-Claude Pecker and Evry Schatzman of the French Academy of Sciences were next on the program. Professor Pecker, an outstanding critic of astrology, focused on astrology's misuse of statistics. Schatzman attempted to explain the rise of paranormal belief in sociological terms. He feels it is due in part to the

Henri Broch describes Minitel, his computerized databank on the paranormal.

diminished influence of the scientific and academic community and to the banality of mass culture.

Professor E. Veermish, a philosopher at the University of Ghent, argued that many paranormal claims should be rejected a priori because they are contradicted by basic scientific laws. Some members of the audience sharply disagreed and argued that this should not preclude investigation, since there may be a need to modify scientific principles. It was clear that there were two brands of skepticism being displayed here.

The Italian and Spanish groups reported that they have received a good deal of national attention in their countries. The representatives from Italy included three skeptical activists under the age of 21. The Spanish group worked closely with faculty members of the University of Balboa.

Of special interest was the paper given by Dr. A. Gertler, head of the skeptics group in Rossdorf, Germany (formerly East Germany). Gertler discussed the dangers of alternative medicine to the public health. Delegates from the Soviet Union were also present during the earlier session but did not make a presentation.

At a special reception on Friday evening, August 10, two CSICOP awards were presented: Cornelis de Jager, head of the Dutch skeptics group, received the In Praise of Reason award for his notable contributions to science and his vigorous criticism of pseudoscience. Henri Broch received the Distinguished Skeptic award for his pioneer work with Minitel and making scientific critiques of the paranormal available to a wider audience in France.

Some important practical results came out of the Brussels conference. Much of this is consistent with the new mood in Europe as the unification of the continent approaches. Efforts are being made to coordinate political, economic, scientific, and cultural activities in time for "Europe 1992." A similar attitude prevails among skeptics groups. The German-speaking delegates from Germany, Austria, and Switzerland decided at

Cornelis de Jager, recipient of the CSICOP In Praise of Reason Award.

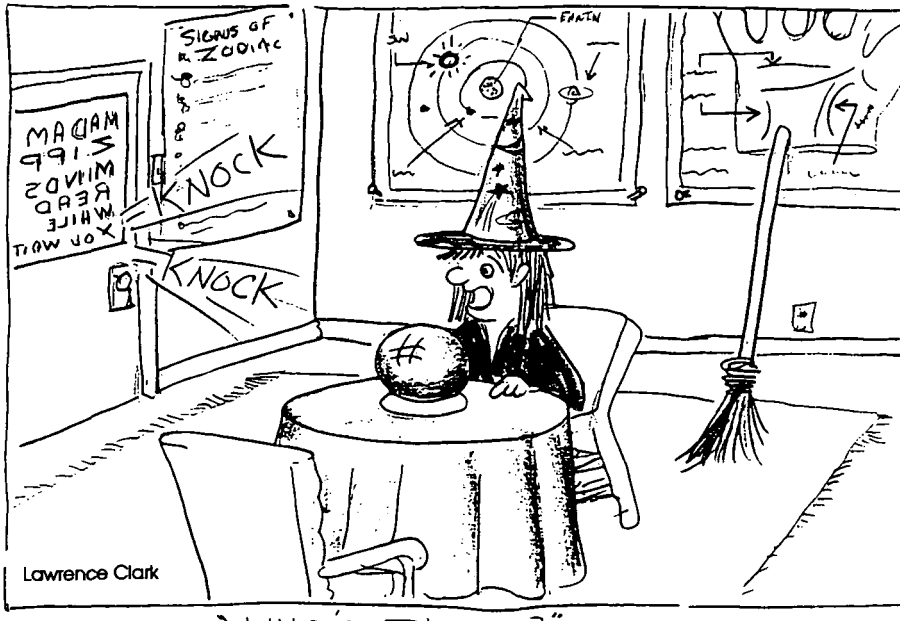
the congress to expand their cooperation by making *Skeptiker* magazine available to a wider German-speaking population. The French-speaking representatives from France, Belgium, and Switzerland also discussed expanding *Afis* magazine, published by Michel Rouzé, and making it available to a wider readership.

The Spanish delegates discussed with a member of the Mexican group ways of improving the information flow between Spain and Latin America and making their magazines better known to each other's readers. The Dutch- and Flemish-speaking Belgians likewise resolved to work together more cooperatively and to expand the readership of the magazine *Skepsis*.

The conferees decided to meet in October 1991 in Amsterdam. This conference will be organized by the Netherlands group. Both the Spanish and Italian groups have volunteered to host a European meeting in 1992.

Coming on the heels of the skeptics conference in Mexico City in November 1989, the Brussels meeting demonstrated anew the key roles that the SKEPTICAL INQUIRER and CSICOP continue to play in increasing the public's appreciation of scientific research and critical thinking and the need for cooperation among skeptics throughout the world.

Paul Kurtz is the founder and chairman of CSICOP and professor of philosophy at the State University of New York at Buffalo.



"WHO'S THERE?"

Local, Regional, and National Organizations

The organizations listed below have aims similar to those of CSICOP and work in cooperation with CSICOP but are independent and autonomous. They are not affiliated with CSICOP, and representatives of these organizations cannot speak on behalf of CSICOP.

UNITED STATES

ALABAMA. Alabama Skeptics, Emory Kimbrough, 3550 Watermelon Road, Apt. 29A, Northport, AL 35476 (205-759-2624).

ARIZONA. Tucson Skeptical Society (TUSKS), James McGaha, Chairman, 2509 N. Campbell Ave., Suite #16, Tucson, AZ 85719. **Phoenix Skeptics,** Michael Stackpole, Chairman, P.O. Box 62792, Phoenix, AZ 85082-2792.

CALIFORNIA. Bay Area Skeptics, Rick Moen, Secretary, 4030 Moraga, San Francisco, CA 94122-3928. **Berkeley Skeptics,** Daniel Bain, Contact, U.C. Berkeley, 300 Eshleman Hall, Berkeley, CA 94720. **East Bay Skeptics Society,** Daniel Sabsay, President, P.O. Box 20989, Oakland, CA 94620 (415-420-0702). **Sacramento Skeptics Society,** Bob Lee, President, 1417 57th St., Sacramento, CA 95819. **Southern California Skeptics,** Susan Shaw, Secretary, P.O. Box 5523, Pasadena, CA 91107; San Diego Coordinator, Ernie Ernissee, 5025 Mount Hay Drive, San Diego, CA 92117.

COLORADO and WYOMING. Rocky Mountain Skeptics, Béla Scheiber, President, P.O. Box 7277, Boulder, CO 80306.

DISTRICT OF COLUMBIA, DELAWARE, MARYLAND, and VIRGINIA. National Capital Area Skeptics, c/o D. W. "Chip" Denman, 8006 Valley Street, Silver Spring, MD 20910.

FLORIDA. Tampa Bay Skeptics, Gary Posner, 6219 Palma Blvd., #210, St. Petersburg, FL 33715 (813-867-3533).

GEORGIA. Georgia Skeptics, Keith Blanton, Vice Pres., P.O. Box 654, Norcross, GA 30091.

ILLINOIS. Midwest Committee for Rational Inquiry, Ralph Blasko, Chairman, P.O. Box 2792, Des Plaines, IL 60017-2792.

INDIANA. Indiana Skeptics, Robert Craig, Chairperson, 5401 Hedgerow Drive, Indianapolis, IN 46226.

KENTUCKY. Kentucky Assn. of Science Educators and Skeptics (KASES), Chairman, Prof. Robert A. Baker, 3495 Castleton Way North, Lexington, KY 40502.

LOUISIANA. Baton Rouge Proponents of Rational Inquiry and Scientific Methods (BR-PRISM), Henry Murry, Chairman, P.O. Box 15594, Baton Rouge, LA 70895.

MASSACHUSETTS. Skeptical Inquirers of New England, Laurence Moss, Chairman, c/o Ho & Moss, Attorneys, 72 Kneeland St., Boston, MA 02111.

MICHIGAN. MSU Proponents of Rational Inquiry and the Scientific Method (PRISM), Dave Marks, 221 Agriculture Hall, Michigan State Univ., East Lansing, MI 48824. **Great Lakes Skeptics,** Carol Lynn, contact, 1264 Bedford Rd., Grosse Pointe Park, MI 48230.

MINNESOTA. Minnesota Skeptics, Robert W. McCoy, 549 Turnpike Rd., Golden Valley, MN 55416. **St. Kloud ESP Teaching Investigation Committee** (SKEPTIC), Jerry Mertens, Coordinator, Psychology Dept., St. Cloud State Univ., St. Cloud, MN 56301.

MISSOURI. Kansas City Committee for Skeptical Inquiry, Verle Muhrer, Chairman, 2658 East 7th, Kansas City, MO 64124. **Gateway Skeptics,** Chairperson, Steve Best, 6943 Amherst Ave., University City, MO 63130.

NEW MEXICO. New Mexicans for Science & Reason, John Geohegan, Chairman, 450 Montclaire SE, Albuquerque, NM 87108; John Smallwood, 320 Abbott Road, Santa Fe, NM 87501.

NEW YORK. Finger Lakes Association for Critical Thought, Ken McCarthy, 107 Williams St., Groton, NY 13073. **New York Area Skeptics** (NYASk), William Wade, contact person, 97 Fort Hill Road, Huntington, NY 11743-2205. **Western New York Skeptics,** Tim Madigan, Chairman, 3159 Bailey Ave., Buffalo, NY 14215.

NORTH CAROLINA. N.C. Skeptics, Michael J. Marshall, Pres., 3318 Colony Dr., Jamestown, NC 27282.

OHIO. South Shore Skeptics, Page Stephens, 6006 Fir Avenue, Cleveland, OH 44102 (216-631-5987).

PENNYSYLVANIA. Paranormal Investigating Committee of Pittsburgh (PICP), Richard Busch, Chairman, 5841 Morrowfield Ave., #302, Pittsburgh, PA 15217 (412-521-2334). **Delaware Valley Skeptics,** Brian Siano, Secretary, Apt. 3F, 4406 Walnut St., Philadelphia, PA 19104.

SOUTH CAROLINA. South Carolina Committee to Investigate Paranormal Claims, John Safko, 3010 Amherst Ave., Columbia, SC 29205.

TENNESEE. Tennessee Valley Skeptics, Daniel O'Ryan, Secretary, P.O. Box 50291, Knoxville, TN 37950.

TEXAS. Austin Society to Oppose Pseudoscience (ASTOP), Lawrence Cranberg, President, P.O. Box 3446, Austin, TX 78764. **Houston Association for Scientific Thinking** (HAST), Darrell Kachilla, P.O. Box 541314, Houston, TX 77254. **North**

(continued on next page)

Texas Skeptics, John Blanton, President, P.O. Box 111794, Carrollton, TX 75011-1794. **West Texas Society to Advance Rational Thought,** Co-Chairmen: George Robertson, 6500 Eastridge Rd., #73, Odessa, TX 79762-5219 (915-367-3519); Don Naylor, 404 N. Washington, Odessa, TX 79761.

WASHINGTON. Northwest Skeptics, Philip Haldeman, Chairman, T.L.P.O. Box 8234, Kirkland, WA 98034.

WISCONSIN. Wisconsin Committee for Rational Inquiry, Mary Beth Emmericks, Convenor, 8465 N. 51st St., Brown Deer, WI 53223.

AUSTRALIA. National: **Australian Skeptics,** P.O. Box E 324 St. James, NSW 2000. Regional: **Australian Capital Territory,** P.O. Box 555, Civic Square, 2608. New South Wales, **Newcastle Skeptics.** Chairperson, Colin Keay, Physics Dept., Newcastle University 2308. **Queensland,** P.O. Box 2180, Brisbane, 4001. **South Australia,** P.O. Box 91, Magill, S.A., 5072. Victoria, P.O. Box 1555P, Melbourne, Vic., 3001. **West Australia,** 25 Headingly Road, Kalamunda, W.A., 6076.

BELGIUM. Committee Para, J. Dommanget, Chairman, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels. **SKEPP,** Tim Trachet, Chairman, de Smet de Naeyerlaan 167, 1090 Brussels.

CANADA. National: Chairman, James E. Alcock, Glendon College, York Univ., 2275 Bayview Avenue, Toronto, Ontario. Regional: **Alberta Skeptics,** Elizabeth Anderson, P.O. Box 5571, Station A, Calgary, Alberta T2H 1X9. **British Columbia Skeptics,** Barry Beyerstein, Chairman, Box 86103, Main PO, North Vancouver, BC, V7L 4J5. **Manitoba Skeptics,** John Toews, President, Box 92, St. Vital, Winnipeg, Man. R2M 4A5. **Ontario Skeptics,** Henry Gordon, Chairman, P.O. Box 505, Station Z, Toronto, Ontario M5N 2Z6. **Quebec Skeptics:** Jean Ouellette, C.P. 282, Repentigny Quebec, J6A 7C6 (514-498-7977).

FINLAND. Skepsis, Matti Virtanen, Secretary, Kuismakuja 1S18, SF-00720 Helsinki.

FRANCE. Comité Français pour l'Etude des Phénomènes Paranormaux, Claude Benski, Secretary-General, Merlin Gerin, RGE/A2 38050 Grenoble Cedex.

GERMANY. East German Skeptics, A. Gertler, Chairman, Inst. for Forensic Medicine, Humboldt Univ., Berlin 1040. **Society for the Scientific Investigation of Para-Science** (GWUP), Amardeo Sarma, Convenor, Postfach 1222, D-6101 Rossdorf.

INDIA. B. Premanand, Chairman, 10, Chettipalayam Rd., Podanur 641-023 Coimbatore Tamil nadu. For other Indian organizations contact B. Premanand for details.

IRELAND. Irish Skeptics, Peter O'Hara, Contact, Dept. of Psychiatry, Airedale General Hospital, Steeton, Keighly, West Yorkshire, UK BD20 6TD.

ITALY. Comitato Italiano per il Controllo delle Affermazioni sul Paranormale, Lorenzo Montali, Secretary, Via Ozanam 3, 20129 Milano, Italy.

MALTA. Contact: Vanni Pule', "Kabbalah," 48 Sirti St., The Village, St. Julian's.

MEXICO. Mexican Association for Skeptical Research (SOMIE), Mario Mendez-Acosta, Chairman, Apartado Postal 19-546, Mexico 03900, D.F.

NETHERLANDS. Stichting Skepsis, Rob Nanninga, Secretary, Westerkade 20, 9718 AS Groningen.

NEW ZEALAND. New Zealand Skeptics, Warwick Don, Dept. of Zoology, Univ. of Otago, Dunedin, NZ.

NORWAY. NIVFO, K. Stenodegard, P.O. Box 2119, N-7001, Trondheim. Skepsis, Terje Emberland, Contact, P. B. 2943 Toyen 0608, Oslo 6.

SOUTH AFRICA. Assn. for the Rational Investigation of the Paranormal (ARIP), Marian Laserson, Secretary, 4 Wales St., Sandringham 2192.

SPAIN. Alternativa Racional a las Pseudosciencias (ARP), Luis Miguel Ortega, Executive Director, P.O. Box 6.112, Bilbao.

SWEDEN. Vetenskap och folkbildning (Science and People's Education), Sven Ove Hansson, Secretary, Sulite Imavägen 15, S-161 33 Bromma.

SWITZERLAND. Conradin M. Beeli, Convenor, Mühlemattstr. 20, CH-8903 Birmensdorf.

UNITED KINGDOM. SKEPTICAL INQUIRER Representative, Michael J. Hutchinson, 10 Crescent View, Loughton, Essex LG10 4PZ. **British & Irish Skeptic** Magazine, Editors, Toby Howard and Steve Donnelly, 49 Whitegate Park, Flixton, Manchester M31 3LN. **London Student Skeptics,** Michael Howgate, President, 71 Hoppers Rd., Winchmore Hill, London N21 3LP. **Manchester Skeptics,** Toby Howard, 49 Whitegate Park, Flixton, Manchester M31 3LN. **Wessex Skeptics,** Robin Allen, Dept. of Physics, Southampton University, Highfield, Southampton S09 5NH. **West Country Skeptics,** David Fisher, Convenor, 27 Elderberry Rd., Cardiff CF3 3RG, Wales.

U.S.S.R. Edward Gevorkian, *Science & Religion,* Ulyanovskaya 43, Kor 4, 109004 Moskova.

The Committee for the Scientific Investigation of Claims of the Paranormal

Paul Kurtz, Chairman

Scientific and Technical Consultants (partial list)

William Sims Bainbridge, professor of sociology, Illinois State University. **Gary Bauslaugh,** dean of technical and academic education and professor of chemistry, Malaspina College, Nanaimo, British Columbia, Canada. **Richard E. Berendzen,** astronomer, Washington, D.C. **Barry L. Beyerstein,** professor of psychology, Simon Fraser University, Burnaby, British Columbia, Canada. **Martin Bridgstock,** lecturer, School of Science, Griffith Observatory, Brisbane, Australia. **Vern Bullough,** dean of natural and social sciences, SUNY College at Buffalo. **Richard Busch,** magician, Pittsburgh, Pa. **Shawn Carlson,** physicist, Berkeley, Calif. **Charles J. Cazeau,** geologist, Tempe, Arizona. **Ronald J. Crowley,** professor of physics, California State University, Fullerton. **Roger B. Culver,** professor of astronomy, Colorado State Univ. **J. Dath,** professor of engineering, Ecole Royale Militaire, Brussels, Belgium. **Felix Ares De Blas,** professor of computer science, University of Basque, San Sebastian, Spain. **Sid Deutsch,** professor of bioengineering, Tel Aviv University, Israel. **J. Dommanget,** astronomer, Royale Observatory, Brussels, Belgium. **Natham J. Duker,** assistant professor of pathology, Temple University. **Barbara Eisenstadt,** educator, Scotia, N.Y. **Frederic A. Friedel,** philosopher, Hamburg, West Germany. **Robert E. Funk,** anthropologist, New York State Museum & Science Service. **Sylvio Garattini,** director, Mario Negri Pharmacology Institute, Milan, Italy. **Laurie Godfrey,** anthropologist, University of Massachusetts. **Gerald Goldin,** mathematician, Rutgers University, New Jersey. **Donald Goldsmith,** astronomer; president, Interstellar Media. **Clyde F. Herreid,** professor of biology, SUNY, Buffalo. **Philip A. Ianna,** assoc. professor of astronomy, Univ. of Virginia. **William Jarvis,** chairman, Public Health Service, Loma Linda University, California. **I. W. Kelly,** professor of psychology, University of Saskatchewan. **Richard H. Lange,** chief of nuclear medicine, Ellis Hospital, Schenectady, New York. **Gerald A. Larue,** professor of biblical history and archaeology, University of So. California. **Bernard J. Leikind,** staff scientist, GA Technologies Inc., San Diego. **Jeff Mayhew,** computer consultant, Aloha, Oregon. **Joel A. Moskowitz,** director of medical psychiatry, Calabasas Mental Health Services, Los Angeles. **Robert B. Painter,** professor of microbiology, School of Medicine, University of California. **John W. Patterson,** professor of materials science and engineering, Iowa State University. **Steven Pinker,** assistant professor of psychology, MIT. **James Pomerantz,** professor of psychology, Rice University; **Daisie Radner,** professor of philosophy, SUNY, Buffalo. **Michael Radner,** professor of philosophy, McMaster University, Hamilton, Ontario, Canada. **Robert H. Romer,** professor of physics, Amherst College. **Milton A. Rothman,** physicist, Philadelphia, Pa. **Karl Sabbagh,** journalist, Richmond, Surrey, England. **Robert J. Samp,** assistant professor of education and medicine, University of Wisconsin-Madison. **Steven D. Schafersman,** geologist, Houston. **Chris Scott,** statistician, London, England. **Stuart D. Scott, Jr.,** associate professor of anthropology, SUNY, Buffalo. **Al Seckel,** physicist, Pasadena, Calif. **Erwin M. Segal,** professor of psychology, SUNY, Buffalo. **Elie A. Shneour,** biochemist; director, Biosystems Research Institute, La Jolla, California. **Steven N. Shore,** astronomer, NASA Goddard Space Flight Center, Md. **Barry Singer,** psychologist, Eugene, Oregon. **Mark Slovak,** astronomer, University of Wisconsin-Madison. **Douglas Stalker,** associate professor of philosophy, University of Delaware. **Gordon Stein,** physiologist, author; editor of the *American Rationalist.* **Waclaw Szybalski,** professor, McArdle Laboratory, University of Wisconsin-Madison. **Ernest H. Taves,** psychoanalyst, Cambridge, Massachusetts. **Sarah G. Thomason,** professor of linguistics, University of Pittsburgh, editor of *Language.*

Subcommittees

Astrology Subcommittee: Chairman, I. W. Kelly, Dept. of Educational Psychology, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0, Canada.

College and University Lecture Series Subcommittee: Chairman, Paul Kurtz; Lecture Coordinator; Ranjit Sandhu, CSICOP, Box 229, Buffalo, NY 14215-0229.

Education Subcommittee: Chairman, Steven Hoffmaster, Physics Dept., Gonzaga Univ., Spokane, WA 99258-0001; Secretary, Wayne Rowe, Education Dept., Univ. of Oklahoma, 820 Van Vleet Oval, Norman, OK 73019.

Electronics Communications Subcommittee: Chairman, Barry Beyerstein, Dept. of Psychology, Simon Fraser Univ., Burbaby, B.C. V5A 1S6 Canada; Secretary, Page Stevens, Box 5083, Cleveland, OH 44101.

Legal and Consumer Protection Subcommittee: Chairman, Mark Plummer, c/o CSICOP, Box 229, Buffalo, NY 14215-0229.

Paranormal Health Claims Subcommittee: Co-chairmen, William Jarvis, Professor of Health Education, Dept. of Preventive Medicine, Loma Linda University, Loma Linda, CA 93350, and Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

Parapsychology Subcommittee: Chairman, Ray Hyman, Psychology Dept., Univ. of Oregon, Eugene, OR 97402.

UFO Subcommittee: Chairman, Philip J. Klass, 404 "N" Street S.W., Washington, D.C. 20024.

The Committee for the Scientific Investigation of Claims of the Paranormal

The Committee for the Scientific Investigation of Claims of the Paranormal attempts to encourage the critical investigation of paranormal and fringe-science claims from a responsible, scientific point of view and to disseminate factual information about the results of such inquiries to the scientific community and the public. To carry out these objectives the Committee:

- Maintains a network of people interested in critically examining claims of the paranormal.
- Prepares bibliographies of published materials that carefully examine such claims.
- Encourages and commissions research by objective and impartial inquiry in areas where it is needed.
- Convenes conferences and meetings
- Publishes articles, monographs, and books that examine claims of the paranormal.
- Does not reject claims on a priori grounds, antecedent to inquiry, but rather examines them objectively and carefully.

The Committee is a nonprofit scientific and educational organization. THE SKEPTICAL INQUIRER is its official journal.